



Prof Jerry S. Y. Kuma

PhD (Newcastle), MSc, PGDip (Delft), BSc (Ghana),
FGhIG, FASI, FCIDA, FWA IMM, MGHIE, MIAH

Vice Chancellor,
University of Mines and Technology

FOREWORD

This report provides an overview of the activities of the University during the 2018/2019 academic year. It provides information on all major constituents of the University, particularly the Office of the Vice Chancellor, Faculties, Academic Departments, the Library, and Administrative and Service Units such as the Registrar's Offices and the Finance Office. The overview gives us a feeling of accomplishment and satisfaction that we are matching forward in our collective effort to make this University continue to stand out as the best public funded University in Ghana.

One significant milestone in the annals of the University during the year under review was the inauguration of an Environmental Monitoring Laboratory which is a DANIDA Mixed Tied Credit Facility for the University. The purpose of which is to help change the face of research in the University and also for the benefit of players in the extractive industry in particular and for Science, Innovation and Technology in general.

Since the last Congregation which was held on Saturday, 28th July, 2018, the University continued to chalk successes in our core business and responded to the needs of our community and stakeholders and recorded significant progress in academic activities. A total of 685 fresh students were admitted to pursue various engineering programmes leading to the award of bachelor's, master's and doctoral degrees. Significantly, the first batches of the Masters programmes in Engineering Management and Business and Technology Management Students were admitted to pursue their programmes.

In line with our vision to become a Centre of Excellence in mining, petroleum, technology and engineering disciplines, UMaT continued its research activities across its Academic Departments and Units, leading to research output and publications in national and international peer-reviewed journals. In addition, the University supported some Senior Members to attend conferences to share knowledge with the global scientific community.

Throughout the year, various academic activities including workshops, seminars, short-term courses, etc. were organised and funded by the University for members of staff. The essence of the workshops and seminars was to prepare members of staff by education, global outlook and commitment for leadership, and also to improve their capabilities to competently and effectively function within the University system.

In terms of funding and support for development in the University, the University faced some challenges during the year under review and as a result investments in some projects in the University were limited. Despite these challenges, Government through the Mineral Development Fund (MDF) provided some funding that enabled contractors to resume work on some of the stalled projects on campus.

The University benefited greatly from the support of a number of companies, corporate organisations and philanthropic individuals during the year under review. With this support, much was achieved to give the University a new dimension in academic excellence and confidence in the pursuit of higher education in the country.

In the ensuing year, the desire to move UMaT to the next level will be on course with the support of all members of the University Community. We shall continue to be focused on delivering on our mandate of teaching, research and extension services to support the development agenda of the country. I wish to express my appreciation and acknowledgement for the support from all staff and students towards the development and progress of UMaT.

Prof J. S. Y. Kuma
Vice Chancellor
July, 2019

TABLE OF CONTENTS

FOREWORD	1
TABLE OF CONTENTS	2
OFFICE OF THE VICE CHANCELLOR	3
PLANNING AND QUALITY ASSURANCE UNIT (PQAU)	9
OFFICE OF INTERNATIONAL PROGRAMMES (OIP)	10
OFFICE OF RESEARCH, INNOVATION AND CONSULTANCY (ORIC)	11
FACULTY OF MINERAL RESOURCES TECHNOLOGY	13
DEPARTMENT OF GEOMATIC ENGINEERING	15
DEPARTMENT OF GEOLOGICAL ENGINEERING	22
DEPARTMENT OF MINING ENGINEERING	28
DEPARTMENT OF MINERALS ENGINEERING	35
DEPARTMENT OF PETROLEUM ENGINEERING	42
DEPARTMENT OF ENVIRONMENTAL AND SAFETY ENGINEERING	47
FACULTY OF ENGINEERING	53
DEPARTMENT OF MECHANICAL ENGINEERING	54
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING	57
DEPARTMENT OF MATHEMATICAL SCIENCES	61
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING	68
DEPARTMENT OF RENEWABLE ENERGY ENGINEERING	73
FACULTY OF INTEGRATED MANAGEMENT SCIENCE	76
DEPARTMENT OF TECHNICAL COMMUNICATION	77
DEPARTMENT OF MANAGEMENT STUDIES	81
SCHOOL OF POSTGRADUATE STUDIES	85
THE OFFICE OF THE REGISTRAR	89
FINANCE OFFICE	99
INTERNAL AUDIT UNIT	101
THE UNIVERSITY LIBRARY	103
UNIVERSITY CLINIC	106
AUDIO VISUAL UNIT	107
INFORMATION AND COMMUNICATION TECHNOLOGY UNIT	108
DEVELOPMENT AND MAINTENANCE UNIT	110
DYNAMITE FM	111
OFFICE OF THE DEAN OF STUDENTS	112
HALLS OF RESIDENCE	114

OFFICE OF THE VICE CHANCELLOR

The Vice Chancellor is the Chief Executive Officer of the University and his responsibilities include but not limited to the overall planning, direction, organisation, management and discipline in the University. As the chief academic, administrator and strategist, the Vice Chancellor provides leadership to all members of the University community and is accountable for the general control and direction of the University. The Vice Chancellor is an ex-officio member of every Faculty, School and Committee of the University and may preside at any such meeting. He exercises responsibility for monitoring and evaluating the performance of the University and its constituent parts in relation to its academic, financial and organisational goals and policies.

PERSONNEL

Name	Academic/Professional Qualification	Designation
Prof J. S. Y. Kuma	PhD (Newcastle), MSc, PgDip (Delft), BSc (Ghana), FGhIG, FASI, FCIDA, FWAIMM, MGhIE, MIAH	Professor and Vice Chancellor
Assoc Prof V. A. Temeng	PhD (Michigan Tech.), MSc (Zambia), PgD, BSc (KNUST), MGhIE, FWAIMM	Assoc Professor and Pro Vice Chancellor
Michael F. Hammond	MBA, B.Ed (Cape Coast)	Junior Assistant Registrar
Ernest Arthur	BA (KNUST)	Senior Administrative Assistant



Prof J. S. Y. Kuma
Vice Chancellor

ACTIVITIES

Visits and Interactions

The University was greatly honoured to receive a number of high profiled personalities, visitors and dignitaries during the year under review. The Vice Chancellor interacted and had engagements with them on issues of mutual interest. Notable among them are:

- His Excellency John Agyekum Kufuor, Former President of the Republic of Ghana and Chancellor of UMaT.
- Hon Kwaku Asomah-Cheremeh, Minister for Lands and Natural Resources.
- Hon Prof Kwesi Yankah, Minister of State for Tertiary Education.
- Hon Dr Kwaku Afriyie, immediate past Western Regional Minister.
- Hon Kwadwo Okyere Darko Mensah, Western Regional Minister.
- Her Excellency Tove Degnbol, Danish Ambassador to Ghana.
- His Excellency Glend Askew, Deputy Australian High Commissioner to Ghana.
- Hon Benito Owusu Bio, Deputy Minister for Lands and Natural Resources.
- Hon George Mireku Duker, Member of Parliament for Tarkwa Nsuem Constituency.
- Hon Rev John Ntim Forjour, Member of Parliament for Assin South.
- Hon Gilbert Ben Asmah, Municipal Chief Executive of Tarkwa Nsuaem Municipal Assembly,
- Mr Kwaku Addae Antwi-Boasiako, CEO of Minerals Commission, Ghana.
- Dr Kojo Busia Chief, Natural Resources Management Section, Climate Change, Environment and Natural Resources Management Division United Nations Economic Commission for Africa (UNECA) in Addis Ababa, Ethiopia.
- Mr Sulemanu Konney, CEO of the Ghana Chamber of Mines.
- Dr Kwame Baah-Nuako, General Manager, Sustainability, GNPC and other officials from GNPC.
- Mr Alexander Kwaning, Director of Finance and Administration, Ministry of Environment, Science, Technology and Innovation (MESTI).
- Mrs Susana Adjei-Addo, Ag Manager, Human Capital, Petroleum Commission, Ghana.
- Mr Jasper Musadaidzwa, Managing Director, AngloGold Ashanti Iduapriem Ltd and some officials of the mine.
- Mr Frederick Attakumah, Senior Vice President for Corporate Affairs and Sustainability of Asanko Gold.
- Madam Adiki Ayitevie, Regional Vice President for Sustainability and External Relations, Newmont Africa and other Officials of the Company.
- Awo A. Quaison-Sackey, Regional Vice President for Human Resources, Newmont Africa.
- Mr Stephen Kofi Ndede, General Manager of Perseus Mining Limited and other Officials of the Mine.
- Rt Rev Thomas Amponsah Donkor, Bishop of the Methodist Church, Tarkwa Diocese.
- Bishop Kakra Baiden, Senior Pastor Qodesh (Morning Star Cathedral), Accra.
- Ms Pilar Velasquez, Programmes Officer, United States Department of Labour (USDOL).
- Mr Alexandre Soh, Technical Officer International Labour Organisation (ILO).
- Mr Giovanni Soledad, Project Manager, CARING Gold Mining Project of ILO.
- Madam Brenda Lee, Vice President, Organisational Development of Genser Energy and other officials of the Company.

- Dr Norris Hammah and other officials from Mineral Development Fund.
- Dr Kingsley Nyarko and other officials from National Accreditation Board.
- Prof Steve Butt, Professor of Petroleum, Mining, Drilling, and Geomechanics, Memorial University of Newfoundland (MUN), Canada.
- Dr Adedoyin Odukoya, Grant Facilitation Officer, Faculty of Engineering and Applied Science, Memorial University of Newfoundland (MUN), Canada.
- Dr Franklin David, Associate Dean for Education, Faculty of Science, University of Portsmouth (UoP), England.
- Mr Roberto Quiroz, Counselor for Public Affairs, US Embassy, Accra.
- Dr Patrick Ofori, Head, Education and Training, GNPC Foundation.
- Ms Ethel Caulley, Education USA Advisor, US Embassy, Accra.
- Mr Max Wyndham, Business Development Manager, Europe, CIS and Sub-Saharan Africa at Drilling Systems.
- Dr Barbara Jamieson, Assistant Dean, International Development, Edinburgh Business School, Heriot-Watt University, Scotland.
- Mr Banda Abdallah Z. Khalifa, Deputy Director for Services and other officials, Ghana Export Promotion Authority (GEPa).
- Dr Doreen Agyei, Director of Operations and Development, African Innovation Alliance and other officials of the Company.
- Dr Stephen Wells, President, New Mexico Institute of Mining and technology, USA..

Linkages and Collaboration

In the course of the year, the University signed Memoranda of Understanding (MoU) with seven institutions. The MoUs would provide a mutually beneficial framework that UMaT and the institutions can work within to achieve shared goals. The institutions are:

- University of Portsmouth, UK.
- Memorial University of Newfoundland, Canada.
- Development Gold International.
- Egypt-Japan University of Science and Technology.
- Genser Energy Company Ghana Limited.
- Newmont Goldcorp Ghana.
- African Innovation Alliance.

National/International Events and Recognition

- In July 2019, UMaT was among other Universities who received the "101 Fabulous Global Educational Institutions" Award at the 8th World Education Congress for Excellence in Education, Leadership and Teaching in Engineering at Mumbai, India.
- In May 2019, UMaT students emerged winners of the Mzuzah competition (Mzuzah Convergence 2019) held in Ashesi University. The event sought to explore the critical role of Africa's young leaders aged between 18 and 33 years in global sustainability and sought to inspire the next generation of African leaders to think more sustainably. After a lengthy process of presentations, UMaT Geomatic Engineering team came first, UMaT Mining Engineering team was second and UMaT Minerals Engineering team came fourth after competing with seventeen teams from other universities. The UMaT Winning Team presented a project titled "Digital Geo-Waste Management System". The system enhances the work of Waste Management authorities in the collection and disposal of solid waste. It provides timely information to the authorities by SMS on when the waste bin gets full. Mzuzah explores models of building connections between sustainability, social and environmental impact, and economic empowerment. Mzuzah brings together experts and thought leaders to engage a diverse group of stakeholders with a focus on millennials in establishing sustainable leadership in Africa and other emerging markets. According to Mzuzah co-founder, Doyin Oluntona, by educating and engaging the next generation of leaders, they expect to develop individuals whose mindsets are hardwired to consider the implications of their actions on the well-being of their ecosystem, which includes their own personal economic well-being; and their community and environmental well-being, resulting in better informed decision makers and approaches to sustainable economic development and social impact issues on the continent. The Geomatic Engineering Team will represent Ghana at the John Hopkins University in the United States of America later in the year.
- In May 2019, Ms Charlotte Abena Benyarku and 3 of her colleagues, who are 2nd year Environmental and Safety Engineering Students called The W2E Group, won the 3rd edition of the Falling Walls Lab Ghana competition organised by the German Academic Exchange Service (DAAD) in Accra. They presented a project entitled "Enva-Clean Fuel". According to the group, in a bid to deal with "after-harvest" waste issues and to find a sustainable alternative for wood fuel, they came up with the Enva-Clean Fuel. The fuel is a conversion of the "after-harvest" waste into charcoal briquettes, using the local concept of charcoal making. Enva-Clean Fuel produces less smoke, burns longer, produces more heat and does not require trees to be cut down thereby conserving the forest. Her prize is a fully sponsored trip to Berlin, Germany to represent Ghana in the International Falling Walls Lab in November, 2019. The Falling Walls Lab competition is a challenging and interdisciplinary platform that offers the opportunity for excellent academics and professionals to present their innovative ideas, research projects and social initiatives. A prestigious jury from science and business

awards the best participants.

- In May 2019, Mr Kwame Ababio, a Geomatic Engineering graduate emerged winner of the 2019 Flourish Prize on Global Goal Number 9 of the United Nations (UN) Sustainable Development Goals. Mr Ababio was among 17 honorees chosen from a total of 809 stories that were submitted and vetted by professors, story editors, and a distinguished jury of the Fowler Center partners and previous Flourish Prize honorees. Global Goal 9 is about building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation. Mr Ababio established his company called Green Afro-Palms after his BSc from UMaT. He designed and invented GAPROTECH in 2014. Since it was first invented, Mr Ababio and his team have continued to radically grow the innovation from an initial zero-emissions processing plant that receives palm fruits from surrounding areas and produce palm oil and kernels into an integrated system. This is transforming the entire palm supply chain in the communities where it is being rolled out in the Ashanti Region of Ghana. AIM2Flourish is an initiative of the Fowler Centre for Business as an Agent of World Benefit at the Weatherhead School of Management. AIM2Flourish stories are about business innovations from for-profit companies that help achieve one or more of the UN Sustainable Development Goals (SDGs), such as ending poverty and ensuring peace and justice. Furthermore, they look for examples of business innovations that increase economic prosperity while contributing to a healthy world and human wellbeing.
- In May 2019, Dr Richard Amarin, a Senior Lecturer at the Department of Petroleum Engineering was awarded the 2019 Society of Petroleum Engineering (SPE) Africa-Region Distinguished Achievement Award for Petroleum Engineering Faculty. He has also been the Faculty Advisor for the SPE UMaT Students Chapter for five years.
- In April 2019, an all female team known as RAGAN from the Computer Science and Engineering, Electrical and Electronic Engineering and Mining Engineering Departments of UMaT were winners of the Health-Care Sector and the Most Promising All Female Team at the 2019 HackLab Hackathon Competition held at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi. They received two thousand Ghana cedis (GH¢2,000.00) as their prize. The team was also awarded the third price, worth USD 20 voucher as the Most Promising Female Team by RingCaptcha, one of the sponsoring companies. The competition brought together 128 teams with 19% being females. The RAGAN team presented a project on a web application titled Babynet - a block-chain powered mobile and web application for tracking a child's health and immunisation records.
- In November 2018, a group of three UMaT students (Team Aurora), emerged winners out of 6 University teams of the Unilever Africa Idea Trophy Competition held in Accra. The Unilever Africa Idea Trophy Competition which was the 6th edition is a multilevel business competition that enables undergraduate students within Africa to take on real business challenges related to the organisation. In February 2019, Team Aurora went on to represent Ghana in South Africa.
- In November 2018, UMaT students were first and second runners up in the National Quarry Life Award Competition organised by Heidelberg Cement (GHACEM). The Quarry Life Award is an initiative which seeks to source ideas from talented students towards the effective management of biodiversity in all mining sites of Heidelberg Cement (HC) Group, the parent Company of GHACEM.
- In October 2018, Mr Prince Essel, a UMaT BSc Electrical and Electronic Engineering graduate, made UMaT and Ghana proud. He was one of three winners of the MakeInAfrica 2018 competition held in Rome. The Organisers received 120 start-up projects from across Africa and the Diaspora for three categories and shortlisted 10 projects for each category and finally 3 top projects, one from each category, emerged winners. Mr Essel was the only Ghanaian among the top three winners.

Some Conferences and Workshops Attended

- Guest Speaker, 69th Honours Day Celebration of Mawuli School on the theme "Celebrating Secondary Education; The integrity of stakeholders in the implementation of the double Track System for Quality Education" Ho, Volta Region, 11th May, 2019.
- Resource Person, Seminar on "Harmonising Engineering Education in West Africa", 2019 Ghana Institution of Engineers Annual Conference on "Engineering and Innovation: Catalyst to Ghana Beyond Aid", Volta Hotel, Akosombo, Eastern Region, Ghana, 27th - 30th March, 2019.
- Guest Speaker, 9th S. H. Amisshah Lecture on "Promoting our Civic Responsibility towards Sustainable Environment: The Role of the Church and State", Gaddiel Acquah Methodist Cathedral, Tarkwa, 9th March 2019.
- Participant, Workshop on Educational Reforms Draft Policy Document, Eastern Premier Hotel, Koforidua, 10th - 12th January, 2019,
- Participant, Workshop on Centralised Admissions for Public Universities, Ghana, the Association of Commonwealth Universities (ACU), Wolburn House, 20-24 Tavistock Square, London, 25th - 30th November, 2018.
- Participant, 1st Annual Conference of the Ghana Institution of Geoscientists, IDL Conference Centre, KNUST, Kumasi, 21st - 23rd November, 2018.
- Participant, 5th Biennial UMaT International Mining and Mineral Conference, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Some University Events during the Year Under Review

1. 5th UMaT Biennial International Mining and Minerals Conference

The University held the 5th Biennial International Mining and Minerals Conference from 1st to 4th August, 2018 on the theme "Expanding the Frontiers of Mining Technology". The Conference was attended by 164 participants from Africa and Australia. The keynote address was delivered by Mr Kwaku Addae Antwi-Boasiako, the Chief Executive Officer of the Minerals Commission. He indicated that being abreast with cutting-edge technology and its application should ensure that countries endowed with mineral resources would benefit from their exploitation, the minimisation of negative environmental impact, reduction of the cost of production and the maximisation of shared revenues.

2. 6th Vice Chancellor's Challenge Cup

The 6th Vice Chancellor's Challenge Cup successfully took place at the UMaT Sports Center. The competition which was held over two days featured 19 participating teams from three different categories. These were the Female category, the Staff and sponsors category and the Male students' category. The final match was battled between the Department of Petroleum Engineering and the Department of Geological Engineering and after a great display of soccer during regulation time with intermittent rains, the game ended with a draw. After the penalty shoot out, the Department of Geological Engineering emerged winners with a 4-3 score in their favour. This year the female category had three teams made up of students from the Tarkwa Midwifery School, Faculty of Engineering (FoE) Ladies and Faculty of Mineral Resource Technology (FMRT) Ladies. After an all-play-all game between the ladies, the FMRT Ladies won the day with 4 points after they were beaten by FoE Ladies 2-3 on penalties and shared a point each. The FMRT Ladies also beat the Tarkwa Midwifery School ladies 1-0 to gain 3 points.

3. 5th Innovation and Career Fair

The University organised its 5th Innovation and Career Fair on the theme "Think smart, be innovative". This year's fair took place on Friday, 5th April, 2019. The Fair is aimed at discovering and harnessing students' talents to bring about improvements in technology. As part of the career session, students were motivated and coached on how to start up their own businesses and grow them. The Guest of Honour for the event was Hon Rev John Ntim Fordjour, the Member of Parliament of Assin South and a distinguished Alumnus of UMaT.

The 5th Innovation and Career Fair showcased a total of ten (10) student projects including the development of:

- CocoaNet won the competition. The group developed an image classification model that is able to detect and classify cocoa diseases from images of cocoa plants.
- Enva-Clean Briket - an alternative for wood fuel using after-harvest-waste, specifically plant waste to generate clean fuel.
- Tuyochat Drone Control Chatbot - a computer program designed to simulate conversation with human users.
- Logdominus Biometric ID Management System - a fingerprint biometric Internet of Things (IOT) device designed and engineered to meet the unique needs of schools. It is unique because it adds speed and control to any area of operation that uses student ID.
- Adepa Eco-Cook Kit also known as Adepa Eco gel is a smokeless fuel for cooking used in specially designed user-friendly enamel coated aluminium stove of high quality.
- 3D Representation and Visualisation of various instruments - a project that seeks to design a simulation program to aid engineering students to learn about various field related techniques as well as the operation of various instruments and tools they use in their field of study.
- Geo-emergency software - a Real-time software comprising a web application and a mobile application designed to address emergency needs of individuals. Geo-emergency does this by creating an intimate relationship between users and various emergency units.
- Design of an interactive 3D drilling rig.
- Symanus - an Advanced School Management System.
- Design of a 3D visualisation of terrains in augmented reality using Sandbox.

4. 4th UMaT Day of Relaxation

The 2019 UMaT day of Relaxation was successfully held on Friday, 26th April, 2019 at the forecourt of the UMaT Auditorium. The purpose of the Day of Relaxation as captured in the UMaT Strategic Plan was to bring all members of the University Community (Staff and Students) to fraternise, socialise and to relax from the year's hard work. This year the scope of the relaxation day was expanded to include a health talk by a Medical Officer from the Tarkwa Municipal Hospital and a health walk. The indoor games were competed for by the staff unions, SRC and GRASAG. At the end of the day, SRC took the trophy that was at stake with 36 points; GAUA took the second position with 21 points, followed by TEWU and the Senior Staff Association with 12 points each. GRASAG had 9 points whilst UTAG had no point. The featuring Band for the day was the Real SBS Band from Tarkwa. Staff and students entertained themselves and were full of excitement.

5. UMaT Hosts a West African Regional Training Workshop on Artisanal and Small-Scale Mining

A 4-day West African Regional Workshop on Artisanal and Small-Scale Mining was held from 21st - 24th May, 2019 at the University on the theme "Making your business thrive through sustainable artisanal small-scale mining practices". The Workshop which was organised in collaboration with Australian Aid through the Australian High Commission in Ghana, the University of Queensland, Australia, the Organisation for Economic Co-operation and Development (OECD) and UMaT, brought together 32 participants from Ghana, Sierra Leone, Mali, Burkina Faso and Cote d'Ivoire.

6. Inauguration of Environmental Monitoring Laboratory

The University inaugurated the state-of-the-art Environmental Monitoring Laboratory at the University. The aim for the establishment of the Laboratory is to promote and improve research activities in the University and also help to conduct consultancies as part of extension services to the mining and allied industries. The laboratory would provide services including water quality analysis, waste water analysis, blast monitoring, rock and soil testing, meteorological data and community training in environmental monitoring and allied services. The laboratory was funded through a DANIDA mixed-tied credit facility at a contract value of eight million, six hundred and twenty six thousand, three hundred and six Euros (€ 8,626,306.00).

Completion of some Projects on Campus

During the year under review, civil and associated works on the Environmental Monitoring Laboratory was completed and handed over.

Our Sponsors

During the year under review the University received support and sponsorship from some organisations and companies in the country for some of her programmes and events. They include:

- Newmont Ghana Limited.
- West Atlantic Energy Limited.
- AngloGold Ashanti Iduapriem Mine Ltd.
- Nexans Kabelmetal Ghana limited
- Ghana National Petroleum Corporation (GNPC).
- Total Petroleum Ghana.
- Fidelity Bank.
- Access Bank.
- African Mining Services.
- Ghana Manganese Company.
- Wilhelm Construction Company Limited.
- Arch Team4.
- UMaT Alumni Association (ALUMaT).
- Maxam Mining Services.
- So Nice Drinking Water.
- Intertek Minerals.
- Ransbert Supplies.
- Societe General Ghana Ltd.
- Tullow Ghana.
- Petroleum Commission, Ghana.

Our Benefactors

- The Government of Ghana has continued to fund the running of the University especially by providing employee compensation and the development of some infrastructure.
- The Inter-Ministerial Committee on Small-Scale Mining commissioned UMaT to train small-scale miners as part of the campaign to adopt sustainable small-scale mining practices in the country. The Committee sponsored the training of 2,427 participants at UMaT in the year under review.
- GNPC continued its scholarship scheme by awarding scholarships to eighty-four (84) brilliant but needy students of the University for the 2018/2019 academic year. The Scholarships cover four years for the BSc students worth Nine Thousand Ghana Cedis (GH¢9,000.00) per student per academic year, two years for the MSc students worth Ten Thousand Ghana Cedis (GH¢10,000.00) per student per academic year and three years for one PhD student worth Fifteen Thousand Ghana Cedis (GH¢15,000.00).
- Total Petroleum Ghana continued its scholarship scheme for six (6) brilliant but needy students of the University. Each student was awarded four thousand, two hundred Ghana Cedis (GH¢4,200.00) for the 2018/2019 academic year.
- CAMFED also continued its scholarship scheme for 6 Female Students of the University. Each student was awarded six thousand, one hundred Ghana Cedis (GH¢6,100.00) per academic year. The amount includes one Laptop, payment of Academic Facility User Fees (AFUF), accommodation fees and some money for living expenses.

- The Member of Parliament for Assin South Constituency, Honourable Rev John Ntim Fordjour donated 9 Laptops and an amount of GH¢2,000.00 to support the establishment of the UMaT Incubation Hub and 20 pieces of LED Street Lights to help the illumination of some parts of the campus.
- Perseus Mining Limited donated five Petrology Microscopes worth one hundred and fifty thousand Ghana Cedis (GH¢150,000.00) to the Department of Geological Engineering of the University.
- Asanko Gold Mining Company Limited also donated five Petrology Microscopes worth one hundred and twenty thousand Ghana Cedis (GH¢120,000.00) to the Department of Geological Engineering.
- RST Instruments, a Geotechnical Instrumentation and Monitoring Company from the United Kingdom donated two Piezometers at a cost of USD2,500 to the Department of Geological Engineering of the University.
- Licensed Surveyors Association of Ghana (LISAG) established a Continuous Operating Reference System (CORS) station on campus.

PLANNING AND QUALITY ASSURANCE UNIT (PQAU)

INTRODUCTION

The Planning and Quality Assurance Unit (PQAU) is under the Office of the Vice Chancellor and it plays a key role in the development and monitoring of quality issues across the university.

STAFFING

Assoc Prof S. Al-Hassan	- Dean
Assoc Prof James R. Dankwa	- Vice Dean
Mr Rowland Philip Baffoe	- Junior Assistant Registrar
Mr Bismark Karikari	- Senior Administrative Assistant



Assoc Prof S. Al-Hassan
Dean, PQAU

ACTIVITIES

- The Unit is involved in planning and implementing systematic processes to ensure that acceptable standards of education, scholarship and infrastructure are maintained and improved upon at UMaT.
- In the year under review, the Unit organised the following seminars/workshops to enhance quality of teaching and management in the University:

Seminars

- Psychological Stress and Burnout Management Seminar for Junior and Senior Staff of the University, 28th August, 2018.
- Electronic Resources for Teaching and Learning Seminar for Convocation, 13th September, 2018.
- Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing, 11th October, 2018.
- Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation, 11th October, 2018.
- Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation, 22nd November, 2018.
- Orientation for Newly Appointed Staff (Teaching and Non-Teaching), 24th - 25th January, 2019.
- University Intellectual Property Policy Seminar for Convocation, 2nd April, 2019.

Workshops

- Workshop for University Examinations Officers on the Processing of Examinations Questions, 27th September, 2018.
- Grant Proposal Development Workshop for Convocation, 17th and 18th October, 2018.
- Workshop for Departmental Administrators on Processing of Vice Chancellor's Report and Basic Statistics of the University, 28th February, 2019.

Other Functions

The other functions of the Unit include:

- Compiling the publications of lecturers annually as a means of stimulating research publications;
- Checking the conduct of examinations to ensure that they are conducted according to laid down regulations;
- Setting up peer review mechanisms for lecturers to review examination questions;
- Developing systems for students to assess lecturers' performances in teaching and lecture delivery;
- Liaising with corporate bodies to establish the relevance of UMaT programmes for effective national manpower development; and
- Conducting tracer studies and assessing how students are performing and meeting the needs of their employers.

External Relations

The Unit is a member of the Inter-University Committee on Quality Assurance set up by Vice Chancellors Ghana (VCG) that meets quarterly to streamline the activities of the various Units on the campuses of Public Universities.

OFFICE OF INTERNATIONAL PROGRAMMES (OIP)

INTRODUCTION

The OIP is the outreach window of the Office of the Vice Chancellor that facilitates the establishment of academic and scholarly cooperative linkages and collaborations between UMaT and Universities/Institutions around the globe to enhance teaching, research, cultural integration and training of Staff.

STAFFING

Prof N. Amegbey - Dean
Dr A. Ewusi - Vice Dean



Prof N. Amegbey
Dean, OIP

ACTIVITIES

The University established new Memoranda of Understanding (MoU) between:

- University of Portsmouth, UK.
- Memorial University of Newfoundland, Canada.
- Development Gold International.
- Egypt-Japan University of Science and Technology.
- Genser Energy Company Ghana Limited.
- Newmont Goldcorp Ghana.
- African Innovation Alliance.

The MoU between UMaT and Ghana National Association of Small-Scale Miners (GNASSM), and between UMaT and Metso Minerals, Ghana, have all been renewed for another five years. The MoU between UMaT and Japan Motors Trading Limited has also been renewed for another two years. This MoU has helped enhanced teaching and learning through a number of internships slots offered to some UMaT students.

OFFICE OF RESEARCH, INNOVATION AND CONSULTANCY (ORIC)

INTRODUCTION

The Office of Research, Innovation and Consultancy (ORIC) is under the Office of the Vice Chancellor. The Office continues to play a key role in the University as the central research and consultancy administrative office, providing support towards the conduct of research. The Office was established to help build a vibrant research and consultancy enterprise at UMaT through the strengthening of research administrative infrastructure, procurement of external funds, good stewardship and valuable collaborations with internal and external agencies, companies and institutions that result in an outstanding global reputation.

STAFFING

Dr Mrs Cynthia B. Boye	- Vice Dean
Mr Eric A. V. Kavaarpuo	- Senior Assistant Registrar
Mrs Florence A. Aboh	- Assistant Registrar



Dr Mrs C. B. Boye
Vice Dean, ORIC

ACTIVITIES

In the year under review, the Office undertook the following activities:

FUNDER REGISTRATIONS

The Office carried out new registrations and renewed existing ones with funding agencies to ensure that institutional registrations remained active. Records of all registrations are managed at the office and staff members of the University are encouraged to access these for use during grant applications. The University has the following active registrations on funder systems as shown in Table 1.

Table 1 Active Registrations on Funder Systems

No.	Registration Name/System	Funding Organization(s)
1	Data Universal Numbering System (DUNS)	USA Federal Government, European Commission, United Nations, USAID, etc.
2	Grants.gov	USA Federal Agencies
3	SAM.gov (formerly CCR)	USA Federal Agencies
4	eRA Commons	USA National Institutes of Health (NIH)
5	WT Grant Tracker	Wellcome Trust
6	Joint Electronic Submission (Je-S) System	UK Economic and Social Research Council
7	Potential Applicant Data Online Registration (PADOR)	European Union
8	Joint Electronic Submission System (Je S-System)	UK Research Councils
9	Danida Fellowship Centre	DANIDA
10	NSF Fastlane	National Science Foundation

SUPPORT FOR PROPOSAL DEVELOPMENT

The Office circulated five (5) volumes of e-Alert on Funding Opportunity Announcements to researchers. These bulletins contained approximately 18 funding opportunities covering mining, social sciences, engineering and environmental sciences. In addition, the Office worked with staff to submit 13 proposals to different funding agencies within the period under review. Table 2 presents the applications and the funding agencies.

Table 2 Applications and Funding Agencies

No.	Research/Grant Support Area/Unit	Title- Concept Note/Proposal	Donor/ Source of funding
Concept Notes			
1	Change Management Facilitation	Change Management Role of UMaT for Goldfields Restructuring Process	Goldfields
2	Social Development: Local Economic Development	Life Beyond Mining	European Union

No.	Research/Grant Support Area/Unit	Title- Concept Note/Proposal	Donor/ Source of funding
3	European Union Partnership for Responsible Minerals (EPRM)	Promoting Responsible Small-Scale Gold Mining for Wealth Creation in Ghana	European Union
4	Mercury-Free Gold Extraction using Sika Bukyia innovation	Reverting from Amalgamation of Small-Scale Gold Mining Operations to Direct Smelting of Gold Extraction in Ghana	Ministry of Lands and Natural Resources, Government of Ghana
5	Responsible gold mining	Training of Small-Scale Miners: Mining and Quarrying etc	ILO
Research Projects			
6	Solid Waste Management in Ghana	Waste Separation at Source	The Toyota Foundation Research Grant Programme 2018
7	Improving upon Sika-Bukyia direct gold smelting technology	Sustainable Artisanal and Small-Scale Gold Mining: Promoting Innovation, Technology and Capacity Building of Miners	International Labour Organization, Ghana
8	Youth with Soft Skills for 21st Century Jobs	Boosting Decent Employment for Africa's Youth	ILO, IDRC/CRDI, Canada, INCLUDE
9	Mercury-free/alternatives to mercury use in gold mining and smelting	SHEATHE: Xenobiotic Substances and Heavy metals in the Environment – A Threat to Health, Ecosystems and development in Ghana.	KNUST Chemistry Department & Aarhus University (AU), Denmark
Consultancies			
10	Consultancy	Tender: Decommissioning and Restoration of Mine Infrastructure	AngloGold Ashanti, Obuasi mine
11	Consultancy	• Customer Satisfaction Survey • Staff Performance Survey	Minescho
12	Consultancy	Tender: Environmental, Socio-Economic, Health and Safety Impact Assessment	AngloGold Ashanti (Iduapriem) Tarkwa Mine
13	Consultancy	Feasibility for Proposed Pilot of Artisanal and Small-Scale Mining Incubation Centres	Ministry of Lands and Natural Resources

CAPACITY BUILDING

As part of efforts to build capacity for effective grants management, members of staff participated in a workshop organised by the Noguchi Memorial Institute for Medical Research, University of Ghana, Legon on Research and Grants Management in Accra. A return workshop by the Noguchi team was also organised for convocation later in the year. In addition, the office in collaboration with University of Ghana and Kwame Nkrumah University of Science and Technology organised a two-day workshop on proposal writing for convocation. The workshop was organised in conjunction with the Planning and Quality Assurance Unit.

COLLABORATIONS

In a bid to foster valuable collaborations for its own operations as well as for researchers, the Office hosted a two-member-team from Kwame Nkrumah University of Science and Technology and Aarhus University in Denmark to discuss opportunities for joint proposal submissions.

OPPORTUNITIES

The Office has the potential to serve as a one-stop shop for researchers for all their research and consultancy support needs. In addition to the pre-award and consultancy services currently provided, the Office is constantly looking for effective collaborations with internal and external institutions and companies for consultancy and grant opportunities.

FACULTY OF MINERAL RESOURCES TECHNOLOGY

INTRODUCTION

The Faculty of Mineral Resources Technology consists of six academic departments, namely: Geomatic Engineering; Geological Engineering; Mining Engineering; Minerals Engineering; Petroleum Engineering; and Environmental and Safety Engineering Departments. All the Departments offer postgraduate programmes in addition to the undergraduate programmes. The Geological Engineering Department additionally offers a two-year Diploma programme in General Drilling. Academic programmes in the Faculty have attracted foreign students from Cameroun, Burkina Faso, Mali, Chad, Nigeria and Sierra Leone. Others are Cote D'Ivoire, Equatorial Guinea, Gabon, Benin, and Congo Brazzaville. The 2018/2019 academic year, saw the Faculty actively involved in research. The Faculty also played an important role in consultancy and extension services to communities in the catchment area of the University and the mining industry in Ghana and abroad.

STAFF OF THE FACULTY

The following are staff of the Dean's office:

Assoc Prof Grace Ofori-Sarpong	-	Dean
Assoc Prof S. Ndur	-	Vice Dean
Mr Peter S. Kwofie	-	Faculty Officer
Mr C. Ayitey		Ag. Faculty Officer
Mr Harrison K. Kpodo	-	Faculty Accounts Officer



Assoc Prof G. Ofori-Sarpong
Dean

POSTGRADUATE PROGRAMMES IN THE FACULTY

Postgraduate programmes that are offered by the Departments in the Faculty are shown in Table 3.

Table 3 Postgraduate Programmes

Department	Postgraduate Programme
Geomatic Engineering	MSc, MPhil, PhD Geomatic Engineering
Geological Engineering	MSc, MPhil, PhD Geological Engineering
Mining Engineering	MSc, MPhil, PhD Mining Engineering
Minerals Engineering	MSc, MPhil, PhD Minerals Engineering
Petroleum Engineering	MSc, MPhil, PhD Petroleum Engineering
Environmental and Safety Engineering	PhD (Special Programme for Staff) Environmental and Safety Engineering

UNDERGRADUATE STUDENTS ENROLMENT

There are one thousand two hundred and seventy-one (1 271) Undergraduate students in the Faculty. The breakdown is shown in Table 4.

Table 4 Undergraduate Students Enrolment

Programme	Year One	Year Two	Year Three	Year Four	Total
BSc Geomatic Engineering	53	58	55	48	214
BSc Geological Engineering	54	57	57	45	213
BSc Mining Engineering	57	60	55	44	216
BSc Minerals Engineering	52	59	57	44	212
BSc Petroleum Engineering	53	42	45	50	190
BSc Environmental and Safety Eng	50	57	56	46	209
Diploma in General Drilling	5	12	0	0	17
Total	324	345	325	277	1271

POSTGRADUATE STUDENT ENROLMENT

There are one hundred and twenty-five (125) postgraduate students in the Faculty. The breakdown is shown in Table 5.

Table 5 Postgraduate Students Enrolment

Department	Programmes			Total
	MSc	MPhil	PhD	
Geomatic Engineering	9	2	3	14
Geological Engineering	20	4	7	31
Mining Engineering	28	8	6	42
Minerals Engineering	18	6	5	29
Petroleum Engineering	4	0	3	7
Environmental and Safety Engineering	0	0	2	2
Total	79	20	26	125

DEPARTMENT OF GEOMATIC ENGINEERING

INTRODUCTION

The Department of Geomatic Engineering is one of the academic departments in the Faculty of Mineral Resources Technology. Geomatic Engineering deals with measurement of the positions and extents of natural and artificial features with the aim of analysing the significance of these positions and their positional relationships on the Earth's surface. It also deals with the management, retrieval and display of spatial information describing both the earth's physical features and the built environment. The programme started in 2001 with the objective of training seasoned professionals in the Geomatic and related industries. Disciplines in the profession include Surveying, Geodesy, Remote Sensing, Photogrammetry, Cartography, Geographical Information Systems and Global Navigation Satellite Systems. Within the year under consideration, the Department continued to run the undergraduate and postgraduate programmes in Geomatic Engineering. In addition to imparting knowledge in the classroom, Faculty members were involved in research and consultancy services. The Department is currently working on the introduction of other programmes such as Land Administration and Information Systems, Geographic Information Systems and Spatial Planning and Design.

ACTIVITIES OF ACADEMIC STAFF

DR PETER EKOW BAFFOE

Research Activities/Interests

- Modelling and Prediction of Noise Levels for Environmental Monitoring.
- Application of GIS in Environmental Issues.
- Digital Photogrammetry.
- Mine Surveys.
- Geocoding and Matching Systems.



Dr Peter Ekow Baffoe
Head

Recent Publications

- **Baffoe, P. E.** and Duker, A. A. (2018), "Performance Evaluation of Some Noise Prediction Modelling Approaches: Multiple Linear Regression and a Hybrid Approach", *American Journal of Engineering Research*, Vol. 7, No. 7, pp. 95 - 103.
- **Baffoe, P. E.** and Duker, A. A. (2018), "Multiple Linear Regression Approach to Predicting Noise Pollution Levels and their Spatial Patterns for the Tarkwa Mining Community of Ghana", *American Journal of Engineering Research*, Vol. 7, No. 7, pp. 104 - 112.
- **Baffoe, P. E.** and Innusah, N. I. (2018), "Comparing Three Major Image Enhancement Techniques for Geospatial Data Processing", *Ghana Journal of Technology*, Vol. 2, No. 3, pp. 8 - 20.
- **Baffoe, P. E.** and Kingsley, A. F. (2018), "Monitoring Food Security in the Akuapem South of Ghana Using Normalised Difference Vegetation Index", *American Journal of Engineering Research*, Vol. 7, No. 7, pp. 77 - 88.
- **Baffoe, P. E.**, Boah, F. N. and Affam, M. (2018), "Mapping 3D Geological Structures and Predicting the Kinematics of the Pitwalls using Photogrammetric Techniques: A Case Study", *American Journal of Engineering Research*, Vol. 7, No. 7, pp. 64 - 76.
- Tikaareba, D. and **Baffoe, P. E.** (2018), "Assessing the Geospatial Distribution of Arsenic and Arsenic Related Diseases in the Obuasi Municipality of Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 222 - 233.

Conferences/Workshops/Seminars

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Peer Reviewer, Ghana Mining Journal (GMJ), Natural Hazard.
- Professional Member, Ghana Institution of Surveyors (MGHS).
- Member, Canadian Institute of Mining, Metallurgy and Petroleum (MCIM), West African Institute of Mining, Metallurgy and Petroleum (MAIMM).
- Academic Member, International Federation of Geomatics (MFIG).
- Consultant, High Court, Circuit Court (Dispute Boundary Surveys), Lands Commission (Teaching of Staff), Small-Scale Mining (Teaching of Workers).

ASSOC PROF BERNARD KUMI-BOATENG

Research Activities/Interests

- Ghana Land Law and Survey Legislation.
- Image Processes and Analysis.
- Data Visualisation.
- Land and Compensation Surveys.
- Mine Surveys.
- Vegetation and Carbon Mapping.

Conferences/Workshops/Seminars

- Resource Person, Workshop on Quality Support, Kumasi Technical University, Kumasi, Ghana, 7th - 15th March, 2019.
- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Visiting Professor, Geography Department, School of Arts and Education, University of the Gambia, 2019.
- Peer Reviewer, Carnegie African Diaspora Fellowship Programme (CADFP).
- Member, International Examinations Committee (IEC) of WAEC, Ghana National Committee of West Africa Examinations Council (WAEC), Ghana Examinations Committee of West Africa Examinations Council (WAEC).
- External Examiner, Departments of Geomatic Engineering, Civil Engineering, Material Science, Centre for Climate Change and Natural Resource, KNUST, Ghana.
- External Assessor, Civil Engineering Department, Accra Polytechnic, Ghana.
- Member, Editorial Board of Journal of Earth Sciences, Science Publishing Group, Editorial Board of International Journal of Remote Sensing Applications.

DR EDWARD ERIC DUNCAN

Research Activities/Interests

- Network Analysis and Renewable Energy.
- 3D Surface and Subsurface GIS Modelling.
- 2D GIS Modelling and Applications.
- Global Positioning Systems for Cadastre Techniques and Application.
- Land Administration Systems - The Case of PGIS.
- Unmanned Aerial Vehicles Techniques and Application.
- Geomatic Training.

Outreach Programmes/Extension Services

- Doctoral Degrees Board, University of Cape Town, South Africa.
- Member, International Society for Photogrammetry and Remote Sensing (ISPRS) WG IV/1 Multi-Dimensional Modelling.

DR MRS CYNTHIA BORKAI BOYE

Research Activities/Interests

- Shoreline Feature Mapping, Modelling and Prediction.
- Coastal Vulnerability Assessment for the Coast of Ghana.
- GIS Applications and Geo-Information Management.
- Cadastral and Engineering Surveys and Designing.

Recent Publication

- **Boye, C. B.** and Abubakar, T. (2019), "Application of Geographic Information System in Emergency Service Delivery - A Case of Ghana National Fire Service", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 65 - 72.
- **Boye, C. B.**, Appeaning Addo, K., Wiafe, G. and Dzigbodi-Adjimah, K. (2018), "Spatio-Temporal Analyses of Shoreline Change in the Western Region of Ghana", *Journal of Coastal Conservation*, Vol. 22, No. 4, pp. 769 - 776.
- **Boye, C. B.**, Peprah, M. S. and Kodie, N. K. (2018), "Geographic Assessment of Telecommunication Signals in a Mining Community: A Case Study of Tarkwa and its Environs", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 41 - 49.
- Peprah, M. S., **Boye, C. B.**, Larbi, E. K. and Opoku Appau, P. (2018), "Suitability Analysis for Siting Oil and Gas Filling Stations using Multi-Criteria Decision Analysis and GIS Approach - A Case Study in Tarkwa and its Environs", *Journal of Geomatics*, Vol. 12, No. 8, pp. 158 - 166.
- Vunase, G., **Boye, C. B.** and Ziggah, Y. Y. (2018), "Predicting Sea Level Anomaly along the Coast of Ghana using Artificial Neural Network Approach", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 234 - 238.

- Larbi, E. K., **Boye, C. B.** and Peprah, M. S. (2018), "A GIS Approach in Optimal Route Selection in the Mining Communities using the Analytical Hierarchy Process and the Least Cost Path Analysis", Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference, UMaT, Tarkwa, Ghana, pp. GLM 49 - 62.
- Amuah, V. I. and **Boye, C. B.** (2018), "Performance Evaluation for Mean Sea Level Prediction using Multivariate Adaptive Regression Splines and Artificial Neural Network", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 1 - 8.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Presenter, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.
- Participant, Workshop on Research Communication and Commercialisation, organised by Association of African Universities, Accra, 15th - 17th May, 2018.

Outreach Programmes/Extension Services

- Reviewer, Journal of Disaster Risk Studies.
- Licensed Surveyor.
- Member, Education Sub-Committee, Ghana Institution of Surveyors (GhIS).
- Coordinator, Ghana Institution of Surveyors (GhIS) Refresher Course, Tarkwa Centre.

DR SAVIOUR MANTEY

Research Activities/Interests

- Remotely Piloted Aircraft Systems for Mapping and Environmental Monitoring.
- Development of Geo-Information Systems.
- Remote Sensing for Environmental Analysis.
- GIS and Remote Sensing in Health.

Recent Publications

- **Mantey, S.**, Tagoe, N. D. and Quayson, B. A. (2018), "A Study of Malaria Epidemic Using Geospatial Information Systems (GIS)", *International Journal of Science and Research (IJSR)*, Vol. 7, No. 10, pp. 1604 - 1609.
- **Mantey, S.** and Tagoe, N. D. (2018), "A Semi-Automatic Spatial Feature Extraction Tool for Minimising Errors in GIS Data Capture", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 34 - 40.

Outreach Programme/Extension Services

- Member of National Vetting Team, Vetting of Small-Scale Miners as Part of Sanitisation and Regularisation of Artisanal and Small-Scale Mining in Ghana.
- Consultant/Drone Pilot and Instructor, Training of Drone Pilots for Operation Vanguard, Minerals Commission and Nation Builders Corps.
- Resource Person, National Tour to Mining Communities to Educate and Sensitise on the Dangers of Bad Mining Practices.
- Resource Person/Drone Pilot, National Monitoring of Galamsey and Small-Scale Gold Mining Sites across all Mining Communities in Ghana.

DR ISAAKA YAKUBU

Research Activities/Interests

- Global Navigation Satellite System (GNSS).
- Cadastral and Engineering Surveys.
- Mine Surveys.
- Geo-Informatics for Disaster Risk Management.
- Land Policy and Administration.
- Spatial Planning.

Recent Publications

- **Yakubu, I.**, Mireku-Gyimah, D. and Duker, A. A. (2019), Spatial Multi-Criteria Modelling and Evaluation of Fire Risk - A Case Study in the West Gonja Area of Ghana, LAP LAMBERT Academic Publishing, Mauritius, 157 pp.
- Ziggah, Y. Y., **Yakubu, I.**, Laari, P. B. and Hui, Z. (2019), "2D Cadastral Coordinate Transformation using Extreme Learning Machine Technique", *Journal of Geodesy and Cartography*, Vol. 67, No. 2, 2018, pp. 321 - 343.
- **Yakubu, I.**, Mireku-Gyimah, D. and Asafo-Adjei, D. (2018), "Hybrid-Methods-for Optimisation of Weights in Spatial Multi-Criteria Evaluation Decision for Fire Risk and Hazard", *World Academy of Science, Engineering and Technology-International Journal of Geotechnical and Geological Engineering*, Vol. 12, No. 12, pp. 723 - 728.

- **Yakubu, I.**, Ziggah, Y. Y. and Peprah, M. S. (2018) "Adjustment of DGPS Data using Artificial Intelligence and Classical Least Square Techniques", *Indian Society of Geomatics-Journal of Geomatics*, Vol. 12, No. 1, pp. 13 - 20.
- **Yakubu, I.**, Ziggah, Y. Y. and Baafi, K. A. (2018), "Prediction of Tidal Effect on the Earth Crust for Geodetic Deformation Monitoring", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 63 - 69.
- **Yakubu, I.**, Ziggah, Y. Y. and Tenadu, K. (2018), "Education for Spatial Planning and Design: Integrating Surveying and Mapping Sciences as a Foundation- A Case Study", *Proceedings of FIG Congress 2018*, Istanbul, Turkey, pp. 1 - 11.
- Ziggah, Y. Y., Peprah, M. S., **Yakubu, I.** and Laari, P. B. (2018), "Predicting Open Pit Mine Geodetic Deformations using Artificial Neural Networks", *Ghana Institution of Surveyors, Land Surveying Division Seminar 2018*, Ho, Volta Region, Ghana, pp. 1 - 26.
- Ziggah, Y. Y., Casimir, N., **Yakubu, I.** and Laari, P. B. (2018), "Fractal Characteristic Analysis of Geodetic Deformation Monitoring Data: An Example from Open Pit Mine in Ghana", *Ghana Institution of Surveyors, Land Surveying Division Seminar 2018*, Ho, Volta Region, Ghana, pp. 1 - 14.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQUA in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.

DR MICHEAL SOAKODAN ADUAH

Research Activities/Interests

- Simulation of Land Use Changes to Support Impact Assessment and Spatial Distributed Planning.
- Design and Application of System Dynamics Simulations in Environmental and Management Problems.
- Flood Mapping, Monitoring, Prediction and Damage Assessment.
- Impact Assessment of Climate Changes and Land Use Changes on Hydrology and Ecology.
- GPS, Satellite Interferometry and Airborne Altimetry for Geoid Modelling and Development of Digital Elevation Models.
- Optical and Radar Remote Sensing for Environmental and Hydrological/Integrated Water Resources Management.

Recent Publications

- **Aduah, M. S.**, Toucher, M. L. and Jewitt, G. P. W. (2018), "Estimating Potential Future Land Use in the Bonsa catchment, Ghana, West Africa", *South African Journal of Geomatics*, Vol. 7, No. 3, 13 pp.
- **Aduah, M. S.** and Amankwah, R. K. (2018), "Impacts of Potential Future Surface Mining on the Hydrology of the Neung Forest Sub-Catchment, Bonsa Catchment, Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 77 - 90.

Conferences/Workshops/Seminars

- The Annual Hydrological Prediction for the Environment (Open HYPE) Course for 2018, Swedish Meteorological and Hydrological Institute (SMHI), Norrköping, Sweden, 4th – 6th September, 2018.
- 5th UMaT Biennial International Mining and Mineral Conference on "Innovations in Mining and Mineral Processing; Expanding the Frontiers of Mining Technology", Tarkwa-Ghana, 1st – 4th August, 2018.

Outreach Programmes/Extension Services

- Supervisor, Surveying and Mapping of Small-Scale Mining Concession Boundaries in Five Mining Regions of Ghana, Inter-Ministerial Committee on Illegal Mining (IMCIM), Accra, October, 2018.
- Resource Person/Lecturer, Short courses on UAV and GIS for Mapping and Monitoring Small-Scale Mines (for Operation Vanguard, Minerals Commission Officers and Nation Builders Corps), Inter-Ministerial Committee on Illegal Mining (IMCIM), Accra, June - September, 2018.

DR NAA DEDEI TAGOE

Research Activities/Interests

- Remotely Piloted Aircraft Systems for Mapping and Environmental Monitoring
- Photogrammetry and Image Processing
- Remote Sensing for Environmental Analysis

Recent Publications

- Mantey, S., Tagoe, N. D. and Quayson, B. A. (2018), "A Study of Malaria Epidemic Using Geospatial Information Systems (GIS)", *International Journal of Science and Research (IJSR)*, Vol. 7 No.10, pp. 1604 - 1609.
- Mantey, S. and Tagoe, N. D. (2018), "A Semi-Automatic Spatial Feature Extraction Tool for Minimising Errors in GIS Data Capture", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 34 - 40.

Outreach Programmes/Extension Services

- Project Coordinator, Inter-Ministerial Committee on Illegal Mining, Office of the President Annex.
- Member, National Vetting Team, Vetting of Small-Scale Miners as part of sanitisation and Regularisation of Artisanal and Small-Scale Mining in Ghana.
- Consultant/Drone Pilot and Instructor, Training of Drone Pilots for Operation Vanguard, Minerals Commission and Nation Builders Corps.
- Resource Person, National tour to Mining Communities to Educate and Sensitise on the Dangers of Bad Mining Practices.
- Resource Person/Drone Pilot, National monitoring of Galamsey and Small-Scale Gold Mining Sites across all Mining Communities.

DR YAO YEVENYO ZIGGAH

Research Activities/Interests

- Artificial Intelligence Application in Geodesy.
- Coordinate Transformation.
- Crustal Deformation.
- Height Systems.
- Geoid and Gravity Field Modelling.

Recent Publications

- Arthur, C. K., Temeng, V. A. and Ziggah, Y. Y. (2019), "Multivariate Adaptive Regression Splines (MARS) Approach to Blast-Induced Ground Vibration Prediction", *International Journal of Mining, Reclamation and Environment*, pp. 1 - 25.
- Arthur, C. K., Temeng, V. A. and Ziggah, Y. Y. (2019), "Novel Approach to predicting Blast-Induced Ground Vibration using Gaussian Process Regression", *Engineering with Computers*, pp. 1 - 14.
- Cheng, P., Hui, Z., Xia, Y., Ziggah, Y. Y., Hu, Y. and Wu, J. (2019), "An Improved Skewness Balancing Filtering Algorithm Based on Thin Plate Spline Interpolation", *Applied Sciences*, Vol. 9, No. 1, pp. 1 - 15.
- Hui, Z., Wang, L., Ziggah, Y. Y., Cai, S. and Xia, Y. (2019), "Automatic Morphological Filtering Algorithm for Airborne LiDAR Data in Urban Areas", *Applied Optics*, Vol. 58, No. 4, pp. 1164 - 1173.
- Hui, Z., Li, D., Jin, S., Ziggah, Y. Y., Wang, L. and Youjian, H. (2019), "Automatic DTM Extraction from Airborne LiDAR Based on Expectation-Maximisation", *Optics and Laser Technology*, Vol. 112, pp. 43 - 55.
- Brantson, E. T., Ju, B., Ziggah, Y. Y., Akwensi, P. H., Sun, Y., Wu, D. and Addo, B. J. (2019), "Forecasting of Horizontal Gas Well Production Decline in Unconventional Reservoirs using Productivity, Soft Computing and Swarm Intelligence Models", *Natural Resources Research*, Vol. 28, No. 3, pp. 717-756.
- Ziggah, Y. Y., Yakubu, I., Laari, P. B. and Hui, Z. (2018), "2D Cadastral Coordinate Transformation using Extreme Learning Machine Technique", *Geodesy and Cartography (The Journal of Committee on Geodesy of Polish Academy of Sciences)*, Vol. 67, No. 2, pp. 321 - 343.
- Ziggah, Y. Y. and Laari, P. B. (2018), "Application of Multivariate Adaptive Regression Splines Approach for 2D Coordinate Transformation", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 50 - 62.
- Ziggah, Y. Y., Peparah, M. S., Yakubu, I. and Laari, P. B. (2018), "Predicting Open Pit Mine Geodetic Deformations using Artificial Neural Networks", *Ghana Institution of Surveyors, Land Surveying Division Seminar 2018*, Ho, Volta Region, Ghana, pp. 1 - 26.
- Ziggah, Y. Y., Casimir, N., Yakubu, I. and Laari, P. B. (2018), "Fractal Characteristic Analysis of Geodetic Deformation Monitoring Data: An Example from Open Pit Mine in Ghana", *Ghana Institution of Surveyors, Land Surveying Division Seminar 2018*, Ho, Volta Region, Ghana, pp. 1 - 14.
- Zhenyang, H., Cheng, P., Ziggah, Y. Y. and Nie, Y. (2018), "A Threshold-Free Filtering Algorithm for Airborne LiDAR Point Clouds Based on Expectation-Maximisation", *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Vol. 42, No. 3, pp. 607 - 610.
- Yakubu, I., Ziggah, Y. Y., Peparah, M. S. (2018), "Adjustment of DGPS Data using Artificial Intelligence and Classical Least Square Techniques", *Journal of Geomatics*, Vol. 12, No. 1, pp. 13 - 20.
- Yakubu, I., Ziggah, Y. Y. and Tenadu, K. (2018), "Education for Spatial Planning and Design: Integrating Surveying and Mapping Sciences as a Foundation- A Case Study", *Proceedings of FIG Congress 2018*, Istanbul, Turkey, pp. 1 - 11.
- Asante-Okyere, S., Xu, Q. Mensah, R. A., Jin, C. and Ziggah, Y. Y. (2018), "Generalised Regression and Feed Forward Back Propagation Neural Networks in Modelling Flammability Characteristics of Polymethyl Methacrylate (PMMA)", *Thermochimica Acta*, Vol. 667, pp. 79 - 92.
- Yakubu, I., Ziggah, Y. Y. and Baafi K. A. (2018), "Prediction of Tidal Effect on the Earth Crust for Geodetic Deformation

Monitoring”, Ghana Journal of Technology, Vol. 2, No. 2, pp. 63 - 69.

- Atuahene, S., Bao, Y., Ziggah, Y. Y., Gyan, P. and Li, F. (2018), “Short-Term Electric Power Forecasting Using Dual-Stage Hierarchical Wavelet-Particle Swarm Optimisation-Adaptive Neuro-Fuzzy Inference System PSO-ANFIS Approach Based on Climate Change”, *Energies*, Vol. 11, No. 10, pp. 1 - 19.
- Asante-Okyere, S., Shen, C., Ziggah, Y. Y., Rulegeya, M. M. and Zhu, X. (2018), “Investigating the Predictive Performance of Gaussian Process Regression in Evaluating Reservoir Porosity”, *Energies*, Vol. 13, No. 12, pp.1 - 13.

Conferences/Workshops/Seminars

- Participant, Technical presentation on the Geodetic Reference Network-Continuously Operating Reference System (GRN-CORS) by License Surveyors Association of Ghana (LISAGH), Accra, Ghana, 5th December, 2018.
- Participant, Meeting between Survey and Mapping Division of Lands Commission (SMD-LC) and Licensed Surveyors Association of Ghana (LISAGH) on LISAGH request on CORS to Director of Survey, LISAGH Concept Paper to the Minister and related Issues, SMD-LC Conference Meeting Room, Accra, Ghana, 3rd October, 2018.
- Presenter, Ghana Institution of Surveyors, Land Surveying Division Seminar 2018, Ho, Volta Region, Ghana, 5th - 7th September, 2018.
- Participant, African Union Scientific, Technical and Research Commission (AU-STRC) Capacity Building Workshop for AU Member States on Accessing the Green Climate Fund, Abuja, Nigeria, 27th - 31st August, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programme/Extension Services

- Reviewer, Geodesy and Cartography (The Journal of Committee on Geodesy of Polish Academy of Sciences), South African Journal of Geomatics, Ghana Surveyors Journal, IEEE Access.
- Co-Opted Member, Joint Survey and Mapping Division and Licensed Surveyors Association of Ghana (SMD-LISAG) Technical Committee on Transformation Parameters and Continuously Operating Reference System (CORS) for Ghana.
- Member, Planning Committee of the License Surveyors Association of Ghana (LISAGH), International Association of Engineers.

MR EDWARD ATTIMO AMIHIAH KWESI

Research Activities/Interests

- Sanitation and Waste Management.
- Land Management.
- Mining and Related Activities.
- Agricultural and Community Development.

Recent Publications

- Kwesi, E. A. A. and Tenadu, K. (2019), “Assessment of Waste Management and Sanitation Services at Local (Municipal) Levels- Case Study in the Mining Communities of Tarkwa, Ghana”, *2019 FIG Working Week*, Hanoi, Vietnam, pp. 1-16.
- Kwesi, E. A. A., Horror, L. C. and Annan, J. K. (2018), “Provision of Sanitation Maps for Improving Waste Management and Sanitation at the District Level: Case Study in the Tarkwa-Nsuaem Municipality of Ghana”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 181 - 190.

Conferences/Workshop/Seminars

- Presenter, 2019 FIG Working Week “Geospatial Information for a Smarter Life and Environmental Resilience”, Hanoi, Vietnam, 22nd - 26th April, 2019.
- Participant, Workshop for UMaT Academic Staff on Online Submission of Students Examination and Assessment Results, organised by the Planning and Quality Assurance and the Examination Units, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Seminar on Electronic Resources for Teaching and Research, organised by the PQAU, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Survey and Land Management Services, ‘Vestel’, ‘Landcomps’ and Other Private Firms in Ghana.
- Survey Consultant, Acquisition and Preparation of Sites for Fish and Crop Farming in the Jomoro District of Ghana.
- Support Services, MMDAs in Mining Areas towards the Provision of Thematic Maps (e.g. Sanitation Maps and Database) for Town Development and Management Planning.
- Survey Consultant, Settling Community Dispute between Stools in the Western Region of Ghana over Boundary, Land Ownership and the Sharing of Royalties Paid by Mining Companies Working on the Land,.

ACADEMIC STAFF

Details of the academic staff of the Geomatic Engineering Department are given in Table 6.

Table 6 Academic Staff of the Geomatic Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr P. E. Baffoe	PhD (UMaT), MSc (Moscow), MGHIS	Senior Lecturer, Head of Geomatic Engineering Department	Modelling and Prediction of Noise levels for environmental monitoring, Application of GIS in Environmental Issues, Digital Photogrammetry, Mine Surveys, Geocoding and Matching Systems
Assoc Prof B. Kumi-Boateng	PhD (UMaT), MSc, BSc (KNUST), MSc (ITC), Cert in Remote Sensing (UT), MASPRS, MGHIE, MGHIS, MAARSE, MCIG	Associate Professor and Dean of Students	Land and Compensation Surveys, Geo-information Science for Environmental Systems Analysis and Management, Spatial Statistics, Carbon Mapping
Dr E. E. Duncan	PhD (Skudai), MSc (Glasgow), BSc (KNUST), MGHIS, MFIG, MAARSE	Senior Lecturer, Head of Renewable Energy Engineering Department	GIS (2D and 3D), GPS, Remote Sensing and Geodesy
Dr Mrs Cynthia B. Boye	PhD (Ghana), PM (ITC), BSc (KNUST), MGHIE, MGHIS	Senior Lecturer and Head, Department of Computer Science and Engineering	Cadastral, Engineering and General Surveys, Shoreline Change Mapping, Modelling and Prediction, GIS Applications and Geographic, Information management, Coastal Processes and sediment transport, GIS–Database development for effective Property rate collection
Dr S. Mantey	PhD (UMaT), MPhil (Cambridge), BSc (KNUST), MIEEE, GRSS, MAARSE	Senior Lecturer and Head, Department of Petroleum Engineering	Remotely Piloted Aircraft Systems for Mapping and Environmental Monitoring, Remote sensing for Environmental Monitoring, Land Surveying
Dr I. Yakubu	PhD, MPhil (UMaT), BSc (KNUST), Cert (UT), MGHIE, MGHIS	Senior Lecturer and Head, Department of Mathematical Sciences	Global Navigation Satellite System (GNSS), Cadastral and Engineering Surveys, Mine Surveys, Geo-Informatics for Disaster Risk Management, Land Policy and Administration and Spatial Planning
Dr M. S. Aduah	PhD (UKZN, SA), MSc (Enschede), BSc (KNUST), GIS Cert. (ITC)	Senior Lecturer	Land use and Climate Change Analysis, Land Use Simulation, Geo-Information Science for Environmental Modelling and Management
Dr Naa Dedei Tagoe	PhD (Cape Town), MSc (Stuttgart), BSc (KNUST), Cert. (TTU), MAARSE	Senior Lecturer	Photogrammetry and Geoinformatics, Remotely Piloted Aircraft Systems for Mapping and Environmental Monitoring, Land Surveying
Dr Y. Y. Ziggah	PhD, MEng (CUG), BSc (KNUST)	Lecturer	Artificial Intelligence application in Geodesy, Crustal Deformation, Coordinate Transformation, Height Systems, Geoid and Gravity field modelling
Mr E. A. A. Kwesi	MPhil, BSc, (KNUST), MGHIS, MFIG, MGHIG, MSME, MGLP	Lecturer	MCDA and SDSS, Map Projections, Cartography, GIS, Survey and Mapping, Land, Farm and Waste Management, Multi-Stakeholder Decision Making and Sustainability Theory and Applications

DEPARTMENT OF GEOLOGICAL ENGINEERING

INTRODUCTION

The Department of Geological Engineering is one of the academic departments under the Faculty of Mineral Resources Technology. The Department offers a four-year Bachelor of Science programme in Geological Engineering and a two-year Diploma programme in General Drilling. Postgraduate modular MSc and MPhil programmes in Geological Engineering are offered on full-time and part-time basis for two-year and three-year durations respectively. PhD programme is also offered on both full-time and part-time basis for three years and four years respectively. The Department, apart from teaching is actively involved in research, consultancy and extension services. Cooperation with industry was strengthened as several of the lecturers were engaged by companies for services.

ACTIVITIES OF ACADEMIC STAFF

ASSOC PROF MICHAEL AFFAM

Research Activities/Interests

- Utilisation of Micronised Plastics in Concrete Mortar for Construction.
- Comparative Analysis of Rockmass Strength Index within the Birimian.



Assoc Prof Michael Affam
Head

Recent Publications

- Baffoe, P. E., Boah, F. N. and **Affam, M.** (2018), "Mapping 3D Geological Structures and Predicting the Kinematics of the Pitwalls using Photogrammetric Techniques - A Case Study", *American Journal of Engineering Research (AJER)*, Vol. 7, No. 7, pp. 64 - 76.
- Ahenkorah, I., Awuah, E. M., Ewusi, A. and **Affam, M.** (2018), "Geotechnical and Petrographic Characterisation of the Birimian Granitoids in Southern Ghana as an Aggregate for Sustainable Road Construction", *International Journal of Advanced Engineering Research and Science*, Vol 5, No. 3, pp. 40-49.
- **Affam, M.** and Oforu, B. (2018), "Improving the Engineering Properties of Spent Ore with Laterite for Road Base and Subbase Construction", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 1 - 9.
- Balegha, M. M. S. and **Affam, M.** (2018), "Design of Optimal Slope Parameters for Polymetic Pit West of the Tarkwaian Geosyncline", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 61 - 66.
- Gyenin P. A. Asare, N. A., Ankomah P, C. and **Affam, M.** (2018), "Stability Challenges with Pits of Increasing Depth to Width Ratio", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. 30 - 39.
- **Affam, M.** and Abdulai, D. (2018), "Geochemical and Petrophysical Correlation of Inherent Properties of the Sekondian Series", *Proceedings of the 1st Annual National Conference of the Ghana Institution of Geoscientists (GHIGCON)*, KNUST, Kumasi, pp. 1-22.

Conferences/Workshops/Seminars

- Participant, 1st Annual National Conference of the Ghana Institution of Geoscientists (GHIGCON), KNUST, Kumasi, Ghana, 22nd- 23rd November, 2018.
- Participant, West African Institute of Mining, Metallurgy and Petroleum (WA IMM) Conference, Accra, Ghana, 13th - 15th November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Consultant, Mining and Allied Industries.
- Geotechnical Ground Investigation for VRA Wind Farm Project.
- Concrete Foundation Integrity Assessment of Primary Crushers for Goldfields Ghana Ltd. (GFGL) and Ghana Manganese Mines (GMC).
- Lithological Density Determination for GMC and AngloGold Ashanti Iduapriem Mines (AAIL).
- Determination of Geomechanical Properties of Rocks for Asanko Gold Mines and AngloGold Ashanti Obuasi Mines (AAOL).
- Reviewer, Ghana Mining Journal.

PROF JERRY SAMUEL YAW KUMA**Research Activities/Interests**

- Environmental issues relating to mining in Ghana.
- Water resources assessment and management.
- Issues on Acid Mine Drainage.

Recent Publications

- Acquah, J., Benyah, F. and Kuma, J. S. Y. (2019), "Regularisation Technique for a Distributed Parameter Identification Problem," *Journal of Mathematics Research, Canadian Center of Science and Education*, vol. 11, No. 1, pp. 64 - 75.
- Seidu, J., Ewusi, A. and Kuma, J. S. Y. (2019), "Combined Electrical Resistivity Imaging and Electromagnetic Survey for Groundwater Studies in the Tarkwa Mining Area, Ghana", *Ghana Mining Journal*, Vol 19, No. 1, pp. 29-41.
- Obosu, J. K., Kuma, J. S. Y. and Buah, W. K. (2019), "Estimation of the Quantity of Water in the Abandoned Underground Mine of Gold Fields Ghana Limited Tarkwa: A Potential Source to Augment Water Supply to Tarkwa Municipality", *Ghana Mining Journal*, Vol 19, No. 1, pp. 9-20.

Conferences/Seminars/Workshops

- Resource Person, Seminar on "Harmonising Engineering Education in West Africa", 2019 Ghana Institution of Engineers Annual Conference on "Engineering and Innovation: Catalyst to Ghana Beyond Aid", Volta Hotel, Akosombo, Eastern Region, Ghana, 27th - 30th March, 2019.
- Guest Speaker, 9th S. H. Amisah Lecture on "Promoting our Civic Responsibility towards Sustainable Environment: The Role of the Church and the State", Gaddiel Acquah Methodist Cathedral, Tarkwa, 9th March, 2019.
- Workshop on Educational Reforms Draft Policy Document, Eastern Premier Hotel, Koforidua, 10th - 12th January, 2019.
- Participant, Workshop on Centralised Admissions for Public Universities, Ghana, the Association of Commonwealth Universities (ACU), Wolburn House, 20 - 24 Tavistock Square, London, 25th - 30th November, 2018.
- Participant, 1st Annual Conference of the Ghana Institution of Geoscientists, IDL Conference Centre, KNUST, Kumasi, 21st - 23rd November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Assessor, University of Ghana.
- Reviewer, Natural Resources Research Journal and Journal of African Earth Sciences.
- Member, Advisory Board, Ghana Mining Journal.

DR ANTHONY EWUSI**Research Activities/Interests**

- Hydrogeological Studies in the Tarkwa Area.
- Groundwater Assessment and Vulnerability in the Tarkwa Area.
- Groundwater Quality Assessment in the Southwest Ghana.

Recent Publications

- Seidu, J., Ewusi, A. and Kuma, J. S. Y. (2019), "Combined Electrical Resistivity Imaging and Electromagnetic Survey for Groundwater Studies in the Tarkwa Mining Area, Ghana", *Ghana Mining Journal*, Vol 19, No. 1, pp. 29-41.
- Ewusi, A. and Seidu, J. (2018), "Hydrogeology of the Basin Granitoids in the Sekyere South District of Ashanti Region, Ghana", *Journal of Geoscience of Environment Protection*, Vol. 6, pp. 252 - 263.
- Seidu, J. and Ewusi, A. (2018), "Assessment of Groundwater Quality using Hydrogeochemical Indices and Statistical Analysis in the Tarkwa Mining Area of Ghana", *Journal of Environmental Hydrology*, Vol. 26, pp. 1 - 14.
- Ewusi, A., Adatsi, E., Aikins, D. and Seidu, J. (2018), "Integrated Geophysical Study to Delineate Mineralised Zones in Southwest Ashanti Belt of Ghana", *Journal of Geoscience of Environment Protection*, Vol. 6, pp. 77 - 89.

Conferences/Seminars/Workshops

- Participant, 1st Annual National Conference of the Ghana Institution of Geoscientists (GHIGCON), KNUST, Kumasi, Ghana, 22nd - 23rd November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Consultant, Minerals and Allied Industries.
- Reviewer, Journal of Water and Sanitation, International Journal of Engineering and Research Technology and Journal of African Earth Science.

DR KOFI ADOMAKO-ANSAH

Research Activities/Interests

- Genesis, Relative Timing and Physico-Chemical Parameters Promoting Gold Mineralisation under Different Redox Conditions in Two Banded-Iron Formation Gold Deposits in the Kraaipan-Amalia Greenstone-Granitoid Terrane of South Africa.
- Significance of Ore Mineralogical and Stable Isotopic Constraints on the Metamorphosed Boliden Au-Rich Massive Sulfide Deposit, Sweden: Implications for Clarification on the Genesis and Exploration for Gold-Base Metal Mineralisation.
- Geological, Petrological and Geochemical Characteristics of the Nabeba BIF-Hosted High-Grade Iron Ore Deposits, Ivindo, Congo: Implication for the Genesis of Hypogene and Supergene Mineralisation.
- Genesis and Exploration Implications for the Magmatic Selebe-Phikwe Cu-Ni-(PGE), Botswana based on Ore Textures and LA-ICP-MS Data of Trace Elements in Magnetite.
- Cu-Au Mineralisation in Amphibolite, Tanzania: Hydrothermal Porphyry-Style or Magmatic.

Recent Publication

- **Adomako-Ansah, K.,** Ishiyama, D. and Allen, R. (2018), "Origin of Zn-Pb-Sb-Au Mineralization Adjacent to the Paleoproterozoic Boliden Au-Rich VMS Deposit, Sweden: Evidence from Petrographic and Oxygen Isotope Characteristics", *Mineralium Deposita*, Vol. 53, pp. 683 - 700.

Conferences/Workshops/Seminars

- Participant, Resources for Future Generations Conference, British Columbia, Canada, 16th -21st June, 2018.

Outreach Programmes/Extension Services

- Consultant, Minerals and Allied Industries.
- Reviewer, Journal of Resource Geology, Geological Quarterly Journal, Geological Journal.

DR GEORGE MENSAH TETTEH

Research Activities/Interests

- Stratigraphic Sequence in the Birimian.
- Genesis of Manganese Mineralisation in the Birimian of Ghana.
- Gold Exploration in the Birimian Supergroup.
- Structural Geology and Metamorphism of Dahomeyan and Togo rocks.
- Geo-metallurgy of Gold Ores.

Recent Publications

- **Tetteh, G. M.** and Lartey, E. O. (2018), "Texture and Gold Grade as Guides to Blending of Conglomerate Ore", *International Journal of Scientific and Technology Research*, Vol. 7, No. 9, pp. 61 - 66.
- **Tetteh, G. M.** and Iddrisu, F. (2018), "Tarkwaian Paleoplacer Gold Recovery Relationship with the Matrix", *Elixir Earth Science*, Vol. 121, pp. 51435 - 51439.
- **Tetteh, G. M.** and Alakuu, D. S. (2018), "Asphalt Road Deterioration Associated with Mineralogy of Rock Aggregates - a Petrographical Study", *International Journal of Scientific Research Engineering and Technology*, Vol. 7, No. 7, pp. 572 - 578.
- **Tetteh, G. M.,** Arthur D. (2018), "Depositional Significance of Pebble Textures and Orientations in the Kawere Conglomerate of the Tarkwaian Group", *The Journal of Geography and Geology, Photon* 121, pp. 317 - 323.
- **Tetteh, G. M.** and Gbagbo, J. (2018), "Pebbles in the Tarkwaian Banket Conglomerate: Inference of Gold Grade and Paleo-Transport Direction", *International Journal of Innovations in Engineering Research and Technology*, Vol. 5, No. 6, pp. 39 - 44.
- **Tetteh, G. M.** and Adu-Gyamfi, P. (2018), "Petrography and Geochemistry of Birimian Gold Deposit, NW Ashanti Belt, Ghana", *Journal of Scientific and Engineering Research*, Vol. 5 No. 5, pp. 22 - 32.
- **Tetteh, G. M.** and Braimah, H. D. (2018), "Pebble Size in Matrix of Palaeoplacer Conglomerate Correlated with Gold Grade", *Journal of Geography, Environment and Earth Science International*, Vol. 14, No. 3, pp. 1 - 14.

Conferences/Seminars/Workshops

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Lecturer, Training Programme on Sustainable Small-Scale Mining, UMaT, Tarkwa, Ghana, 2018 - 2019.

DR ASARE ASANTE-ANNOR**Research Activities/Interests**

- Groundwater Resources Vulnerability and Protection in Ghana.
- Development of Water Resources for Agricultural, Industrial and Domestic Purposes.
- Establishment of Suitable Engineered Landfill Sites in Ghana.

Recent Publications

- Oti, D., Asante-Annor, A., Bigson, K. and Avane, G. (2019), "Rainstorm Intensity-Duration-Frequency Model for Tarkwa, Ghana", *Ghana Mining Journal*, Vol. 198, No. 1, pp. 21-28.
- Asante-Annor, A., Acquah, J. and Ansah, E. (2018), "Hydrogeological and Hydrochemical Assessment of Basin Granitoids in Assin and Breaman Districts of Ghana", *Journal of Geoscience and Environment Protection*, Vol. 6, No. 9, pp. 31 - 57.
- Asante-Annor, A., Bewil, P. N. and Boateng, D. (2018), "Evaluation of Groundwater Suitability for Irrigation in the Lambussie-Karni District of Ghana", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 9 - 19.
- Asante-Annor, A., Konadu, S. A. and Ansah, E. (2018), "Determination of Potential Landfill Site in Tarkwa Area using Multicriteria GIS, Geophysical and Geotechnical Evaluation", *Journal of Geoscience and Environment Protection*, Vol. 6, No. 10, pp. 1 - 27.

Conferences/Seminars/Workshops

- Participant, West African Institute of Mining, Metallurgy and Petroleum (WAIMM) Conference, Accra, Ghana, 13th - 15th November 2018.
- Participant, NEC UTAG Educational Forum, organised by UTAG National, Elmina, Ghana, 11th October 2018.

Outreach Programmes/Extension Services

- Consultant, Minerals and Allied Industries.
- Reviewer, Ghana Mining Journal.
- Treasurer, UTAG - UMaT.

DR DOUGLAS OTI**Research Activities/Interests**

- Impact of Industrial Activities on Surrounding Waterbodies.
- Treatment of Water, Wastewater, and Landfill Leachate.
- Application of Artificial Intelligence to Predict Extreme Hydrologic Conditions/ or Predict Hydrologic Contaminations.

Recent Publication

- Oti, D., Asante-Annor, A., Bigson, K. and Avane, G. (2019), "Rainstorm Intensity-Duration-Frequency Model for Tarkwa, Ghana", *Ghana Mining Journal*, Vol. 198, No. 1, pp. 21-28.

Conferences/Seminars/Workshops

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MRS ETORNAM BANI FIADONU**Research Activities/Interest**

- The Genesis of Gold in the Proterozoic Rocks of Ghana.
- Petrographical and Geochemical Study of the various Types of Gold Mineralisations at Damang Mine, Western Ghana.

Conferences/Seminars/Workshops

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR FAREED MAJEED**Research Activities/Interests**

- Ore Deposit Modelling.
- Mineral Exploration and Mine Geology.
- Resource Modelling and Evaluation.
- Artificial Intelligence and Extreme Machine (Deep Learning) Techniques to Mineral Resource Evaluation.

MR JAMEL SEIDU

Research Activities/Interests

- Groundwater Studies.
- Geophysics.
- Water Resources Management.

Recent Publications

- **Seidu, J.**, Ewusi, A. and Kuma, J. S. Y. (2019), "Combined Electrical Resistivity Imaging and Electromagnetic Survey for Groundwater Studies in the Tarkwa Mining Area, Ghana", *Ghana Mining Journal*, Vol 19, No. 1, pp. 29-41.
- Ewusi, A. and **Seidu, J.** (2018), "Hydrogeology of the Basin Granitoids in the Sekyere South District of Ashanti Region, Ghana", *Journal of Geoscience of Environment Protection*, Vol. 6, pp. 252 - 263.
- **Seidu, J.** and Ewusi, A. (2018), "Assessment of Groundwater Quality using Hydrogeochemical Indices and Statistical Analysis in the Tarkwa Mining Area of Ghana", *Journal of Environmental Hydrology*, Vol. 26, pp. 1 - 14.
- Ewusi, A., Adatsi, E., Aikins, D. and **Seidu, J.** (2018), "Integrated Geophysical Study to Delineate Mineralised Zones in Southwest Ashanti Belt of Ghana", *Journal of Geoscience of Environment Protection*, Vol. 6, pp. 77 - 89.

Conferences/Seminars/Workshops

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR DERRICK AIKINS

Research Activities/Interests

- Gold in the Birimian Terrain of West Africa.
- Medical Geology.
- Isotope Geology and Fluid Inclusion.

Recent Publications

- Ewusi, A., Adatsi, E., **Aikins, D.** and Seidu, J. (2018), "Integrated Geophysical Study to Delineate Mineralised Zones in Southwest Ashanti Belt of Ghana", *Journal of Geoscience of Environment Protection*, Vol. 6, pp. 77 - 89.
- Kusi, G. and **Aikins, D.** (2018), "Human Health Problems in Bibiani Related to Concentrations of Trace Elements in Water", *Elixir Earth Science*, Vol. 122, pp. 51747 - 51751.

Conferences/Seminars/Workshops

- Participant, 1st Annual National Conference of the Ghana Institution of Geoscientists (GHIGCON), KNUST, Kumasi, Ghana, 22nd- 23rd November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR EDMUND NANA ASARE

Research Activities/Interests

- Improving Geotechnical Properties of Soils using Biological Methods and Plastics.
- Comparative Analysis of Rockmass Strength Index within the Birimian Metallurgenic Deposit.
- Utilisation of Micronised Plastics in Concrete Mortar for Construction.

Conferences/Workshops/Seminars

- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

ACADEMIC STAFF

Details of the academic staff of the Geological Engineering Department are given in Table 7.

Table 7 Academic Staff of the Geological Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Assoc Prof M. Affam	PhD (UMaT), MSc, BSc (KNUST), MGHIG, MGHIE, MsCIM	Associate Professor and Head of Department	Rock Mechanics, Foundation Design and Mineral Exploration Techniques
Prof J. S. Y. Kuma	PhD (Newcastle), MSc, PGDip (Delft), BSc (Ghana), FGhIG, FWAIMM, FASI, FCIDA, MGHIE, MIAH	Professor and Vice Chancellor	Water Resource Eng., Mine Water Hydrology and Remediation, Geophysics
Dr A. Ewusi	PhD, MSc (TU Bradenburg), BSc (KNUST)	Senior Lecturer and Head, Department of Management Studies	Groundwater Resources Evaluation, Hydrogeological Studies, Environmental Impact Assessment
Dr K. Adomako-Ansah	PhD, M Eng (Akita, Japan), BSc (Ghana)	Senior Lecturer	Economic Geology, Fluid Inclusions and Isotope Geochemistry, Major and Trace Elements Geochemistry Ore Deposit Geology and Petrology, Mineral Exploration, Environmental Geoscience
Dr G. M. Tetteh	PhD, MPhil, BSc (Ghana), MGHIG, MGSAF	Senior Lecturer	Geochemistry, Structural Geology, Petrology and Mineral Exploration
Dr A. Asante-Annor	PhD, MSc (TU Bradenburg), BSc (KNUST)	Lecturer, Departmental Examinations Officer	Groundwater Engineering, Environmental Studies
Dr D. Oti	PhD (USF, Florida), MSc (NC&T, North Carolina), BSc (KNUST)	Lecturer and Departmental Training Officer	Water Resources and Environmental Engineering
Mrs E. B. Fiadonu	MPhil, BSc (UMaT),	Lecturer	Economic Geology (Petrology, Mineralogy and Exploration)
Mr F. Majeed	MSc, BSc (KNUST)	Technical Instructor	Mineral Resources Exploration and Evaluation, Geophysics
Mr J. Seidu	MPhil, BSc (UMaT)	Assistant Lecturer	Groundwater studies, Geophysics, and Water Resource Management
Mr D. Aikins	MPhil, BSc (UMaT)	Assistant Lecturer	Mineralogy, Petrology, and Geochemistry
Mr E. N. Asare	MPhil, BSc (UMaT)	Assistant Research Fellow	Rock and Soil mechanics, Foundation Design

DEPARTMENT OF MINING ENGINEERING

INTRODUCTION

The Department of Mining Engineering offers a four-year degree programme leading to the award of BSc in Mining Engineering. The programme aims at producing graduates capable of exploiting mineral deposits by surface and underground mining techniques and handling of the associated environmental issues. The Department also runs postgraduate programmes in Mining Engineering leading to the award of MSc, MPhil and PhD degrees. The Department additionally runs short courses for industry members to empower them in their career progression. The Department has special interest in sustainable small-scale mining in Ghana and, thus, strongly supports the University's collaboration with the Ghana National Association of Small-Scale Miners to offer training and extension services to the Association. In July and August 2018, the Department in collaboration with other departments of the Faculty of Mineral Resources Technology trained District Mining Officers (DMOs) of the Minerals Commission, Officers of the Environmental Protection Agency (EPA), the District Mining Committees (DMCs), and some executive members of the Ghana Association of Small-Scale Miners (GNASSM). The aim of the training programme was to provide capacity building for these personalities to enable them discharge their duties effectively and efficiently. This was commissioned by the Minerals Commission under the Natural Resource and Environmental Governance (NREG) Programme. In November 2018, the Department received a cheque of \$250,000 as the first payment of the one million dollar Professorial Chair in Mining Engineering established by Ghana National Petroleum Corporation (GNPC) for four years. The major objective of the Professorial Chair would be to strengthen the capacity of the Department of Mining Engineering to become a Centre of Excellence.

ACTIVITIES OF ACADEMIC STAFF

DR GEORGE AGYEI

Research Activities/Interests

- Mineral Beneficiation.
- Process Mineralogy of Nickel.
- Mine Machinery.
- Sustainable Development and Business Ethics.
- Waste Dump Closure and Cost Estimates.
- Riffle Height and Spacing of a Sluice Board on Placer Gold Recovery.

Recent Publications

- **Agyei, G.**, Flores, A. H. and Purón, A. R. (2018), "An Analysis of the Fractional Distribution of the Substantial Composition of Limonitic Nickel Ore from Punta Gorda, Moa, Holguin, Cuba", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 9 - 20.
- **Agyei, G.**, Osei, J. B. and Adoko, A. C. (2018), "Slope Stability Analysis of Nkran Pit at Asanko Gold Mine, Ghana", *Journal of Applied Sciences and Environmental Management*, Vol. 22, No. 10, pp. 1673 - 1677.
- Opafunso, Z. O., Alaba, O. C. and **Agyei, G.** (2018), "Health Risk Assessment Model for Lead Contaminated Soil in Bagega Community, Zamfara State, Nigeria", *Journal of Applied Science and Environmental Management*, Vol. 22, No. 5, pp. 719 - 724.
- **Agyei, G.**, Opafunso, Z. O. and Yameogo, K. W. (2018), "Comparative Analyses of the Return on Investment of 2013 and 2015 Mineral Policy Reforms in Burkina Faso", *Journal of Applied Science and Environmental Management*, Vol. 22, No. 8, pp. 1239 - 1245.
- **Agyei, G.** and Temeng, V. A. (2018), "Location Analysis and Selection of Bulk Emulsion Sites for Mining Operations: A Case Study in West Africa", *Aspects in Mining and Mineral Science*, Vol. 2, No. 3, pp. 1 - 14.



Dr George Agyei
Head

PROF DANIEL MIREKU-GYIMAH

Research Activities/Interests

- Mine Design and Planning.
- Mine Feasibility Study.
- Operations Research.
- Environmental Protection.
- Corporate Social Responsibility Management.

Recent Publications

- Boye, P., **Mireku-Gyimah, D.** and Sadiq, H. (2019), "Time Series Analysis Model for Estimating the Price of a Housing Unit", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 35 - 41.
- **Mireku-Gyimah, D.** and Boateng, K. S. (2018), "Selection of Blast Design for Kofi C Pit of Endeavour Kofi Mine, Mali", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 30 - 36.
- Mariko, I. and **Mireku-Gyimah, D.** (2018), "Open Pit Optimisation and Design of Tabakoto Pit at AngloGold Ashanti

Sadiola Mine using Surpac and Whittle Software”, *Ghana Mining Journal*, Vol. 18, No. 2, pp. 37 - 47.

- Yakubu, I., **Mireku-Gyimah, D.** and Asafo-Adjei, D. (2018), “Hybrid Methods for Optimisation of Weights in Spatial Multi-Criteria Evaluation Decision for Fire Risk and Hazard”, *International Journal of Geotechnical and Geological Engineering*, Vol. 12, No.12, pp. 723 - 728.

Outreach Programmes/Extension Services

- Moderator, Implementation of Social Responsibility Agreement between Newmont Ghana Gold Limited and Ahafo Mine Local Community.

PROF NEWTON ATTA AMEGBEY

Research Activities/Interests

- Blast Impact Studies.
- Air Pollutant Dispersion Studies.
- Environmental Impact Assessments.
- Environmental Management Plans and Studies.
- Safety Management.
- Safety Audit.

Recent Publications

- Eshun, P. A., Davies-Ocloo, E. A. and **Amegbey, N.** (2018), “Multi-criteria Decision Analysis Approach to Mine Closure Planning: A Case Study”, *Environment and Natural Resources Research*, Vol. 8, No. 2, pp. 100 - 115.
- Yenzanya, S. and **Amegbey, N.** (2018), “Assessment of Rescue Facilities and Personnel in Ghanaian Underground Mines”, *Ghana Mining Journal*, Vol. 18, No. 1, pp. 56 - 64.

Outreach Programmes/Extension Services

- Team Leader, Assessment of Underwater Blasting at New Port and Container Terminal, Tema, Ghana.
- Team Leader, Blast Impact and Air Pollutant Dispersion Study at Atuabo Pit, Goldfields Ghana Ltd., Tarkwa Mine.
- Team Leader, Safety Audit.

PROF ZACHEUS OLANIYAN OPAFUNSO

Research Activities/Interests

- Explosive Applications in Mineral Industries.
- Mineral Economics.
- Mine Management and Law.

Recent Publications

- **Opafunso, Z. O.**, Alaba, O. C. and Agyei, G. (2018), “Health Risk Assessment Model for Lead Contaminated Soil in Bagega Community, Zamfara State, Nigeria”, *Journal of Applied Science and Environmental Management*, Vol. 22, No. 5, pp. 719 - 724.
- Agyei, G., **Opafunso, Z. O.** and Yameogo, K. W. (2018), “Comparative Analyses of the Return on Investment of 2013 and 2015 Mineral Policy Reforms in Burkina Faso”, *Journal of Applied Science and Environmental Management*, Vol. 22, No. 8, pp. 1239 - 1245.
- Ifelola, E. O. and **Opafunso, Z. O.** (2018), “Effect of Induced pH Change on Overburden Topsoil Nutrient Availability in Bituminous Area of Ondo State, Nigeria”, *IOSR Journal of Environmental Science, Toxicology and Food Technology*, Vol. 12, No. 9, pp. 50 - 58.
- Ifelola, E. O. and **Opafunso, Z. O.** (2018), “An Assessment of Surface Water Heavy Metal Background Properties: A Precursor to Baseline Pollution Control for Bituminous Sand Open Pit Mining”, *IOSR Journal of Environmental Science, Toxicology and Food Technology*, Vol. 12, No. 9, pp. 81 - 88.
- Buaba, E. M., Cudjoe, F. and **Opafunso, Z. O.** (2018), “Slope Stability Analysis of the Amoanda East Pit Wall of Aboso Goldfields Limited, Damang, Western Region, Ghana”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. 11 - 16.
- Owolabi, A. O., **Opafunso, Z. O.** and Lajide, L. (2018), “Radiogenic Characterisation of Wastes and Soil around Cassiterites Mine Sites, Plateau States, Nigeria”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 160 - 172.
- Fosu, F., Al-Hassan, S. and **Opafunso, Z. O.** (2018), “Pit Optimisation and Design of Hill A Manganese Deposit at Nsuta, Ghana”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 88 - 101.

ASSOC PROF SULEMANA AL-HASSAN**Research Activities/Interests**

- Geostatistics.
- Mineral Economics.
- Mine Planning and Design.
- Surface and Underground Mining and Technology.
- Small Scale Mining.

Recent Publications

- Eme, P., **Al-Hassan, S.** and Amankwah, R. K. (2018), "Powder Factor Selection for Improved Rock Fragmentation at AngloGold Ashanti Iduapriem Limited", *International Journal of Scientific and Engineering Research*, Vol. 9, No. 10, pp. 276 - 487.
- Kwaw, A. K., **Al-Hassan, S.**, Chukwu, A. U., Asante, A. O. and Botwe, T. (2018), "Comparative Study on Linear and Non-linear Geostatistical Methods: A Case Study on Kalsaka Hill Gold Deposit, Burkina Faso", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 21 - 29.
- Eme, P., **Al-Hassan, S.** and Amankwah, R. K. (2018), "Powder Factor Selection for Comminution Circuit Performance at AngloGold Ashanti Iduapriem Mine", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. 1 - 6.
- Odoi, B. S., Samita, S., **Al-Hassan, S.** and Twumasi-Ankrah, S. (2018), "Efficiency of Bartlett and Levenes Tests for Testing Homogeneity of Variance under varying Number of Replicates and Groups in One: Way ANOVA", *WRF International Conference*, Colomno, Sri-Lanka, pp. 42 - 46.
- Fosu, F., Jones, S., **Al-Hassan, S.** and Opafunso Z. O. (2018), "Deformation, 3D Modelling and the Application of Ordinary Kriging to the Pit C Manganese Deposit, Nsuta, South-Western Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 102 - 131.
- Fosu, F., Zoe, S., **Al-Hassan, S.** and Opafunso, Z. O. (2018), "Pit Optimisation and Design of Hill A Manganese Deposit at Nsuta, Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 88 - 101.

Conferences/Workshops/Seminars

- Resource Person, Round Table Discussion at the Institute of Economic Affairs in Accra on "Galamsey Menace in Ghana: The Way Forward", Institute of Economic Affairs (IEA), Accra, 11th February, 2019.
- Participant, Erasmus Network Forum at EU-Higher Education Cooperation between Germany and Ghana, La Palm Beach Hotel, Accra, 28th - 30th November, 2018.
- Participant, Seminar on French Language Certification, Ibis Styles Hotel, Airport City, Accra, 8th - 9th October, 2018.
- Participant, Finalisation of Work Plans and Associated Budgets Preparation, Multi-Sectorial Mining Integrated Project (IMMP) in Eastern Premier Hotel, Koforidua, 19th - 21st September, 2018.

Outreach Programmes/Extension Services

- Visiting Associate Professor, Training of Planners, Grande Cote Operations (GCO), Senegal, 10th - 14th December, 2018.
- Member, Inter Ministerial Committee on Illegal Mining (IMCIM) Vetting of Small-Scale Mining, Office of the President Annex, Cantonment, Accra, 24th November - 7th December, 2018.
- Participant, Multi-Sectorial Mining Integrated Project (MMIP) Government of Ghana/Envelopment Partners Implementation Support Mission (ISM), Ministry of Land and Natural Resources Conference Room, Accra, 17th September, 2018.

ASSOC PROF VICTOR AMOAKO TEMENG**Research Activities/ Interests**

- Prediction of Blasting Outcomes using Artificial Intelligence Techniques.
- Modelling and Simulation of Underground Materials Handling Systems using Arena.
- Impact of Encroachment of Illegal Miners on AngloGold Ashanti Obuasi Concession.
- Design and Selection of Belt Conveyor System in Ghanaian Mines.

Recent Publications

- Arthur, C. K., **Temeng, V. A.** and Ziggah, Y. Y. (2019), "A Novel Approach to Predicting Blast Induced Ground Vibration using Gaussian Process Regression", *Engineering with Computers*, pp. 1 - 14.
- Arthur, C. K., **Temeng, V. A.** and Ziggah, Y. Y. (2019), "Multivariate Adaptive Regression Splines (MARS) Approach to Blast-Induced Ground Vibration", *International Journal of Mining, Reclamation and Environment*, pp. 1 - 25.
- Owusu-Tweneboah, M., **Temeng, V. A.** and Awuah-Offei, K. (2019), "Agent Based Optimisation for Truck Dispatching in Open-Pit Mines", *Proceeding of the 2019 SME Annual Conference and Expo, and CMA 121st National Western Mining Conference*, Denver, Colorado, pp. 1 - 4.
- Owusu-Tweneboah, M. and **Temeng, V. A.** (2018), "Stochastic Simulation of Underground Scooptram-Truck System

using Arena", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 174 - 188.

- Agyei, G. and **Temeng, V. A.** (2018), "Location Analysis and Selection of Bulk Emulsion Sites for Mining Operations - A Case Study of West Africa", *Aspects in Mining and Mineral Science*, Vol. 2, No. 3, pp. 1 - 14.
- Muriuki, J. W. and **Temeng, V. A.** (2018) "Computer-Aided Cutoff Grade Optimisation for Open Pit Mines", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 1-8

Conferences/Workshops/Seminars

- Resource Person, Seminar on "Harmonising Engineering Education in West Africa", 2019 Ghana Institution of Engineers Annual Conference on "Engineering and Innovation: Catalyst to Ghana Beyond Aid", Volta Hotel, Akosombo, Eastern Region, Ghana, 27th - 30th March, 2019.
- Resource Person, Workshop on Quality Support, Kumasi Technical University, Kumasi, Ghana, 7th - 15th March, 2019.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Resource Person, Workshop on Quality Support, Kumasi Technical University, Kumasi, Ghana, 7th - 15th March, 2019.
- Coordinator, Training Programme on Sustainable Small-Scale Mining, UMaT, Tarkwa, Ghana.
- Visiting Associate Professor, Short Course on Materials Handling for Staff of Grande Cotê SA, Senegal, October 2018.
- Reviewer, International Journal of Mining and Mineral Engineering (IJMME) Inderscience Online.

MR EMMANUEL MAWULI BUABA

Research Activities/Interests

- Slope Stability.
- Mine Drainage.
- Explosive and Rock Fragmentation.
- Underground Excavations.

Recent Publication

- **Buaba, E. M.**, Cudjoe, F. and Opafunso, Z. O. (2018), "Slope Stability Analysis of the Amoanda East Pit Wall of Aboso Goldfields Limited, Damang, Western Region, Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 11 - 16.

MR BRIGHT OPPONG AFUM

Research Activities/Interests

- Explosives and Blasting Technology.
- Surface and Underground Mining Systems.
- Underground Mine Planning and Scheduling.
- Operations Research.
- Mining Regulations.
- Environmental Impact Assessments, Mine Closure and Reclamation Studies.
- Atmospheric and Blast Impact Studies.
- Atmospheric and Water Quality Monitoring, Modelling and Studies.
- Small-Scale Mining.
- Environmental Mapping and Geochemistry.

Recent Publications

- Huang, S., Li, G., Ben-Awuah, E., **Afum, B. O.** and Hu, N. (2019) "A Robust Mixed Integer Linear Programming Framework for Underground Cut-and-Fill Mining Production Scheduling", *International Journal of Mining Science and Technology*, pp. 1 - 18.
- **Afum, B. O.**, Caverson, D. and Ben-Awuah, E. (2018), "A Conceptual Framework for Characterizing Mineralized Waste Rocks as Future Resource", *International Journal of Mining Science and Technology*, Vol. 29, No. 3, pp. 429 - 435.

MR RICHARD AMOAKO

Research Activities/Interests

- Geostatics.
- Mine Planning and Design.
- Environmental and Economic Sustainability of Small-Scale Mining.

Recent Publication

- Amoah-Kyei, A., Amoako, R. and Dumakor-Dupey, N. K. (2018), "Fragmentation Analysis of Backfill Material for Paboase Modified Sublevel Caving (MSLC)", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 71-75.

Conferences/Workshops/Seminars

- Participant, 2019 SME Annual Conference and Expo and CMA 121st National Western Mining Conference on "Mining and Exploration: Innovations and Technologies: Automation in Mining: The Present and the Future", Denver, Colorado, 24th - 27th February, 2019.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR EMMANUEL JOHN ANDREW APPIANING

Research Activities/Interests

- Explosives and Blasting Technology.
- Underground Mining Systems.
- Mine Planning and Design.
- Environment.

Recent Publications

- Appianing, E. J. A. and Ben-Awuah, E. (2018), "Underground Mining Stope Layout Optimization and Production Scheduling: A Review of Existing Solvers and Algorithms", *Mining Optimisation Laboratory (MOL) Report Nine*, pp. 271-304.
- Maremi, A., Appianing, E. J. A. and Ben-Awuah, E. (2018), "Estimating Production Schedule Risk using a Multi-Objective Mixed Integer Linear Goal Programming Model", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 33-54.

MR RICHARD GYEBUNI

Research Activities/Interests

- Mine Feasibility Studies.
- Mine Planning Design.
- Corporate Social Responsibility Management.
- Health, Safety and Environmental Studies.
- Operations Research.

MR SYLVESTER YENZANYA

Research Activities/Interests

- Explosives and Blasting Technology,
- Environmental Engineering in Mining,
- Mine Rescue and Emergency Management.
- Occupational Health and Safety.

Recent Publication

- Yenzanya, S. and Amegbey, N. (2018), "Assessment of Rescue Facilities and Personnel in Ghanaian Underground Mines", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 56 - 64.

Conferences/Workshops/Seminars

- Participant, 3rd Annual Conference of the West African Institution of Mining, Metallurgy and Petroleum (WA IMM), Ghana Shippers Council, Accra, 13th - 15th November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Team Member, Assessment of Underwater Blasting at New Port and Container Terminal, Tema, Ghana.
- Team Member, Blast Impact and Air Pollutant Dispersion Study at Atuabo Pit, Goldfields Ghana Ltd., Tarkwa Mine.
- Team Member, Safety Audit.

MR MICHAEL OWUSU- TWENEBOAH**Research Activities/Interests**

- Operations Research.
- Materials Handling.
- Simulation and Optimisation of Mining Systems.

Recent Publications

- **Owusu-Tweneboah, M., Temeng, V. A. and Awuah-Offei, K. (2019), "Agent Based Optimisation for Truck Dispatching in Open-Pit Mines", 2019 SME Annual Conference and Expo, and CMA 121st National Western Mining Conference, Denver, Colorado, pp. 1 - 4.**
- **Owusu-Tweneboah, M. and Temeng, V. A. (2018), "Stochastic Simulation of Underground Scooptram-Truck System using Arena", Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference, UMaT, Tarkwa, Ghana, pp. MN 174 - 188.**

Conferences/Workshops/Seminars

- Presenter, 2019 SME Annual Conference and Expo and CMA 121st National Western Mining Conference on "Mining and Exploration: Innovations and Technologies: Automation in Mining: The Present and the Future", Denver, Colorado, 24th - 27th February, 2019.
- Participant, 1st Annual National Conference of the Ghana Institute of Geoscientists on "The Role of Geoscience in Sustainable National Development", IDL conference Centre, KNUST, Kumasi, Ghana, 21st - 23rd November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Facilitator, Quarry Life Research Competition.

ACADEMIC STAFF

Details of the academic staff of the Mining Engineering Department are given in Table 8.

Table 8 Academic Staff of the Mining Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr George Agyei	PhD (ISMM, Moa), DSc Tech, (ISMM-Moa), MBA, (Educatis) BSc (ISMM-Moa), Pg Ed (ISMM-Moa), Cert. in French Language (ISMM-Moa), MIQ	Senior Lecturer and Head of Mining Engineering Department	Mineral Processing, Industrial Mineral, Surface and Underground Mining, Sustainability
Prof Daniel Mireku-Gyimah	PhD, DIC (London), DSc (hc, KNUST and UMaT), MSc (Mos. Min. Inst.), CEng, OV, MIMM, MSME, MNYAS, FGhIE, FGA, MGHIG	Professor, Foundation Vice Chancellor of the University of Mines and Technology, Tarkwa	Mine Design and Planning, Operations Research, Mine Economic and Financial Evaluation, Mineral Resource Estimation, Mine Feasibility Study and Environmental Impact Assessment
Prof Newton A. Amegbey	Dr-Ing (TU Berlin), MSc (Pet. Min. Inst.), FMVS, MGDMDG, MSME	Professor, Ag. Dean, International Programmes and Director, University Laboratories	Mine Ventilation and Safety Engineering/ Human Factors, Mining Regulations, Mine Machinery
Prof Z. O Opafunso**	PhD, (Akure) MSc, MBA, (USA) LL.B	Professor	Explosive Applications in Mineral Industries, Surface Mine Management, Mineral Economics, and Law
Assoc Prof Sulemana Al-Hassan	PhD (Cardiff), PgD, BSc (KNUST), MGHIG	Associate Professor and Dean, Planning and Quality Assurance Unit	Geostatistics, Mine Planning and Design, Surface and Underground Mining Technology, Mineral Economics
Assoc Prof Victor Amoako Temeng	PhD (Michigan Tech.), MSc (Zambia), PgD, BSc (KNUST), MGHIE, FWAIMM	Associate Professor and Pro Vice Chancellor	Operations Research, Materials Handling, Mine Economic Evaluation, Mine Planning
Mr Emmanuel M. Buaba	MSc (Exeter), PgDip, BSc (KNUST)	Lecturer	Geotechnical Engineering, Mine Ventilation and Safety, Mine Machinery Safety Engineering
Mr Bright Oppong Afum*	MSc (Aberystwyth), BSc (KNUST), MAusIMM, MSME	Lecturer	Explosives and Blasting Technology, Environmental Monitoring and Analysis, Surface and Underground Mining Systems, Mine Planning and Design, Mining Regulations

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr Richard Amoako*	MPhil, BSc (UMaT)	Lecturer	Geostatistics, Mine Rehabilitation Practices, Environmental and Economic Sustainability of Small-Scale Mining
Mr Emmanuel John Andrew Appianing*	MPhil, BSc (UMaT)	Lecturer	Mine Planning and Design, Mineral Economics and Financial Evaluation, Underground Mining systems, Materials Handling
Mr R. Gyebuni	MPhil, BSc (UMaT)	Technical Instructor	Mine Feasibility Studies, Mine Planning Design, Corporate Social Responsibility Management, Health, Safety and Environmental Studies, Operations Research
Mr S. Yenzanya	MPhil, BSc (UMaT)	Assistant Lecturer, Departmental Training Officer	Environmental Engineering in Mining, Explosives and Blasting Technology, Mine Rescue and Emergency Management, Occupational Health and Safety
Mr M. Owusu- Tweneboah	MPhil, BSc (UMaT)	Assistant Lecturer, Departmental Exams Officer	Operations Research Engineering, Materials Handling, Simulation and Optimisation of Mining Systems, Surface and Underground Mining Operation

** Visiting Scholar *On Study leave

DEPARTMENT OF MINERALS ENGINEERING

INTRODUCTION

The Department of Minerals Engineering offers a four-year programme leading to the award of a BSc Minerals Engineering. It also offers MSc, MPhil and PhD programmes in Minerals Engineering. For the year under review the academic staff offered extension/consultancy services to the minerals industry in addition to the normal teaching and research activities. Notable among these was the active participation of some academic staffs in the training of thousands of small-scale miners on sustainable mining practices. Cooperation with industry was strengthened further and Industry Partners and alumni continue to contribute to the running of the Department. The Department as a way of expanding its frontiers in research and innovation is working towards the introduction of two postgraduate programmes in Materials Engineering and Waste and Resource Engineering for technological advancement of industries.

ACTIVITIES OF ACADEMIC STAFF

ASSOC PROF JAMES RANSFORD DANKWAH

Research Activities/Interests

- Production of Diesel Range of Liquid Fuels from Waste Automotive Engine Oil (Dirty Oil).
- Ferrosilicon Production from Blends of Iron-Ore with Waste Automotive Glass/Broken Bottles using End-of-Life Plastics as Reducing Agents.
- Ferrochromium Production from Blends of Iron Ore with Chromium (III) Oxide Recovered from Waste Leather Shoes using End-of-Life Polymers as Reductants.
- Sustainable Utilisation of Waste Toner Powder and Cartridges as Iron and Carbon Resource for the Ironmaking Industry.
- Production of Premium Grade Iron Nuggets, Ferrosilicon Alloy and Alumina from Low Grade Bauxite Ores using Blends of End-of-Life Plastics as Reductants.
- Application of Microwaves in Mineral Extraction.
- Production of Diesel Range of Liquid Fuels from End-of-Life Polymers.
- Application of the Polymer Injection Technology to Foamy Slag Practice in Electric arc Furnace Steelmaking (End-of-Life Vehicle Tyres).
- Recovery of Rare Earth Metals and Rare Earth Metal Oxides from Spent Fluorescent Tubes.
- Catalytic Conversion of Waste Automotive Engine Oils into Diesel Range of Fuel.
- Production of Tiles from Sand-Waste Plastics Composites.



Assoc Prof J. R. Dankwah
Head

Recent Publications

- **Dankwah, J. R.** (2018), "Waste Epoxy Modified Iron Oxide-Polymer Composite Pellets: Green Strength Development and Oxide Reactivity in Ironmaking Technology", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 47 - 54.
- Koshy, P., Dankwah, J. B., Dankwah, J. and **Dankwah, J. R.** (2018), "Calcination Behaviour of Guizhou Siderite Ore and its Amenability to Reduction by Waste Polymers", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 63 - 68.
- **Dankwah, J. R.** (2018), "Laboratory Studies on the Effect of End-of-Life Rubber Tyre Blending with Metallurgical Coke on Slag Foaming in Electric Arc Furnace Steelmaking", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 48 - 57.
- **Dankwah, J. R.**, Yussif, I., Hinson, O. S., Owusu, C. K., Agorhom, E. A. and Koshy, P. (2018), "Application of Microwave Technology to the Production of Iron Nuggets from the Sheini Iron Ore using Mixed Plastics Waste as Reductants", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 79 - 87.
- Souleymane, A., Quaicoe, I., Ndur, S. A. and **Dankwah, J. R.** (2018), "Pyrolytic Decomposition of End-of-Life Vehicle Tyres in Ghana into Fuel using a Locally Manufactured Reactor", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 10 - 16.
- Koshy, P., Dankwah, J. B. and **Dankwah, J. R.** (2018), "Calcination Behaviour of Guizhou Siderite Ore and its Amenability to Reduction by Waste Polymers", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 105 - 110.
- Dankwah, J. B., Dankwah, J., Koshy, P. and **Dankwah, J. R.** (2018), "Production of Ferrosilicon Alloy from the Pudo Iron Ores using End-of-Life Rubber Tyre as Reductant", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 68 - 74.
- Gohoho, H. D. and **Dankwah, J. R.** (2018), "Production of Gypsum from Clam Shells and Waste Acid Recovered from End-of-Life Lead Acid Batteries", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 82 - 88.

Conferences/Workshops/Seminars

- Speaker, West African Institute of Mining, Metallurgy and Petroleum WYPG 2019 Conference on "Ghana's Proposed Integrated Iron and Steel Corporation: Suggested Approach and the Role of End-of-Life Vehicle Tyre as Important Feedstock", GMC, Nsuta, Ghana, 14th- 16th February, 2019.

- Speaker, Ghana Chamber of Mines Joint Environment, Social Affairs and Technical (ENSOC) Conference on “Value Addition to Ghanaian Bauxites: The Role of Waste Plastics in Minimisation of Red Mud Production”, Golden Tulip Hotel, Kumasi, Ghana, 12th- 15th September, 2018.
- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.
- Member, GIZ-MESTI Workshop on Sustainable Management of Plastic Waste in Ghana, North Rhine Westphalia, Bonn, Germany, 14th- 21st July, 2018.

Outreach Programmes/Extension Services

- Editorial Board Member, Ghana Mining Journal, Ghana Journal of Technology and All Nations University Journal of Applied Thoughts.
- Reviewer, Canadian Journal of Chemical Engineering JOM, The Journal of the Metals, Minerals and Materials Society, Ghana Mining Journal, Ghana Journal of Technology, Journal of Kwame Nkrumah University of Science and Technology (JUST), Advances in Materials Science and Engineering and All Nations University Journal of Applied Thoughts.

PROF RICHARD KWASI AMANKWAH

Research Activities/Interests

- Gold Beneficiation.
- Small-Scale Mining.
- Medical Geography.
- Biohydrometallurgy and Environmental Biotechnology.
- Application of Microwaves in Mineral Extraction.
- Geometallurgy and Mine-to-Mill Interface.
- Education and Eradication of Buruli Ulcer.
- Gold Plant Design and Operations under Conditions of Metal Price, Grade and Throughput Uncertainties.
- Women in Mining.

Recent Publications

- Adzigbli, A. E., Ofori-Sarpong, G. and **Amankwah, R. K.** (2018), “Water Washing of Fungal-Treated Carbonaceous Ores: Effect on Aurocyanide Adsorption by Activated Carbon in CIL Circuit”, *Ghana Mining Journal*, Vol. 18, 1, pp. 65 - 71.
- Hausermann, H., Ferring, D., Atosona, B., Mentz, G., **Amankwah, R. K.**, Chang, A., Hartfield, K, Effah, E., Asuamah, G. Y., Mansell, C. and Sastri, N. (2018), “Land-Grabbing, Land-Use Transformation and Social Differentiation: Deconstructing “Small-Scale” in Ghana’s Recent Gold Rush”, *World Development*, Vol. 108, pp. 103 - 114.
- Aduah, M. S. and **Amankwah, R. K.** (2018), “Impacts of Potential Future Surface Mining on the Hydrology of the Neung Forest Sub-Catchment, Bonsa Catchment, Ghana”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 77 - 90.
- Amoah, M. B., Varris, P., **Amankwah, R. K.** and Tetteh, H. N. (2018), “The Future Mine Model-Exploring Potential Opportunities and Challenges in Ghana”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 198 - 208.
- Eme, P., Alhassan, S. and **Amankwah, R. K.** (2018), “Powder Factor Selection for Comminution Circuit Performance Improvement at AngloGold Ashanti Iduapriem Limited”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MN 17 - 22.
- Ali, E. I., Osei, R., Ofori-Sarpong, G. and **Amankwah, R. K.** (2018), “Assessing the Combined Effect of White Rot Fungi on Bioleaching of Gold from Refractory Gold Ores”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 32 - 37.
- Banson, A. K., **Amankwah, R. K.**, Asiam, E. K. and Ndur, S. A. (2018), “Hydrogeochemistry and Arsenic Distribution in Groundwater of Obuasi Municipality”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 24 - 31.
- Banson, A. K., **Amankwah, R. K.** and Ndur, S. A. (2018), “Surface Water and Groundwater Characteristics of the Obuasi Municipality”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 32 - 38.
- Banson, A. K., **Amankwah, R. K.**, Asiam, E. K. and Ndur, S. A. (2018), “Geochemical Water Dynamics and Arsenic Distribution in Surface Water and Groundwater of Obuasi Municipality”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 17 - 23.
- Boateng, F. and **Amankwah, R. K.** (2018), “Fiduciary Responsibility of Gold Mining Companies to Stakeholders: The Case of Ghana Mining Industry”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. CS 1 - 8.
- Orleans-Boham, H. and **Amankwah, R. K.** (2018), “Characterisation of Baked Clays Used to Satisfy Pica Habit of Pregnant Women”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 38 - 43.

- Saim, A. K., Ntiri-Bekoh, R., Orleans-Boham, H. and **Amankwah, R. K.** (2018), "Phytoremediation of Cyanide by *Alocasia Macrorrhizos* (Giant Taro)", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, ES 105 - 109.
- Isa, S. A., Agorhom, E. A. and **Amankwah, R. K.** (2018), "Metal Ion Contamination in Roselle Calyx Juice ("Sobolo") and its Health Effect, Preparation Methods and Mitigation Strategies", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 56 - 63.
- Isa, S. A., Hammond, A. and **Amankwah, R. K.** (2018), "Metal Ion Contamination in Local Brewing of Akpetetshie", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 64 - 68.
- Orleans-Boham, H., Sakyi-Addo, G. B., Tahiru, A. and **Amankwah, R. K.** (2018), "Effects of the Ban on Small Scale Mining on Women in Mining", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. CS 9 - 13.
- Adjei, D. K., Konadu-Yiadom, E., Ofori-Sarpong, G. and **Amankwah, R. K.** (2018), "Effect of Copper and Nickel on the Adsorption of Gold onto Activated Carbon from Heterogeneous Cyanide Solution", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR202 - 210.
- Ganiyu, B., Adam, M. and **Amankwah, R. K.** (2018), "Characteristics of Oily Wastewater in Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 46 - 50.

Conferences/Workshops/Seminars

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Member, National Vetting Committee for Small-Scale Miners.
- Visiting Professor, African University of Science and Technology, Abuja and Jomo Kenyatta University of Agriculture and Technology, Kenya.
- Investigator, Canadian International Resources and Development Institute Project on 'Blazing the Path of Formalisation: Artisanal Mining, Wealth Creation and Rural Livelihoods in Ghana.
- Leader, UNDP Project on Mercury and Artisanal Mining.
- Consultant, USAID Project on Mercury Abatement.
- Researcher, UNPD Programme on Improving Transparency and Governance in the Artisanal and Small-Scale Mining Sector.
- Lead Consultant, Investigating the SAG Mill Comminution (SMC) Energy of the Fetish and Bokitsi Ore, Perseus Mining.
- Lead Consultant, Pilot Heap Leach Studies on Akrokeri Deposit, Goldstone Ltd., Geometallurgical Investigations on Material from Different Pits at Nordgold Mine, LEFA, Guinea, Auditing of the Metallurgical Laboratory at Nordgold Mine, LEFA, Guinea, Geometallurgical Mapping of Mining Blocks and Golden Star Resources, Wassa Mine.
- Editorial Board Member, Extractive Industries and Society.
- Advisory Board Member, Ghana Mining Journal.
- Reviewer, Canadian Metallurgical Quarterly Journal, Hydrometallurgy Journal, Minerals Engineering, Ghana Mining Journal, Resources Policy, Journal of Cleaner Production, Mineral Processing and Extractive Metallurgy, Journal of Water, Sanitation and Hygiene for Development, Extractive Industries and Society, Arabian Journal for Science and Engineering and International Journal of Mineral Processing.

ASSOC PROF WILLIAM KWAME BUAH

Research Activities/Interests

- Fabrication of a Reactor for Commercial Production of Activated Carbons.
- Activated Carbon Technology.
- Design of a Double Roll Crusher.
- Design of a Laboratory Screen.
- Recycling of Biomass: Biogas Production from Biomass Wastes.
- Development of a Technology for Recycling Sawdust.

Recent Publication

- Obosu, J. K., Kuma, J. S. Y. and **Buah, W. K.** (2019), "Estimation of the Quantity of Water in the Abandoned Underground Mine of Gold Fields Ghana Limited Tarkwa: A Potential Source to Augment Water Supply to Tarkwa Municipality", *Ghana Mining Journal*, Vol 19, No. 1, pp. 9-20.

Outreach Programmes/Extension Services

- Speaker, Public Lecture to Commemorate 90th Anniversary of the Ghana Chamber of Mines on "A Responsible and Sustainable Mining Industry - a partner for national development", Alisa Swiss Hotel, Accra, 23rd November, 2018.
- Reviewer, Waste and Biomass Valorization Journal, Chemical Engineering Journal, Ghana Mining Journal.
- Editorial Board Member, International Journal of Mining Science, International Journal of Energy and Environmental Science.

- Consultant, Minerals and Allied Industries.
- Integrated Waste Management Education in Ghana.

ASSOC PROF GRACE OFORI-SARPONG

Research Activities/Interests

- Microbial-Mediated Mineral Extraction.
- Acid Drainage Issues of Mining Sites.
- Environmental Biotechnology.
- Bio-Treatment of Oil-Contaminated Waste.
- Small-Scale Gold Mining.

Recent Publications

- Adjei, D. K., Konadu-Yiadom, E., **Ofori-Sarpong, G.** and Amankwah, R. K. (2018), "Effect of Copper and Nickel on the Adsorption of Gold onto Activated Carbon from Heterogeneous Cyanide Solution", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 202 - 210.
- Adzigbli, A. E., **Ofori-Sarpong, G.** and Amankwah, R. K. (2018), "Water Washing of Fungal-Treated Carbonaceous Ores: Effect on Aurocyanide Adsorption by Activated Carbon in CIL Circuit", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 65 - 71.
- Forson, P., Adam, A. S. and **Ofori-Sarpong, G.**(2018), "Improving Acid Wash Efficiency of Loaded Activated Carbon in a Gold Desorption Circuit", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 75 - 81.
- Osei, M. B., Firempong, C. K. and **Ofori-Sarpong, G.** (2018), "Antioxidant and Cytotoxic Activities of Marantochloa Leucantha- A Preliminary Study", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 97 - 104.
- Owusu, C., **Ofori-Sarpong, G.** and Amankwah, R. (2018), "The Effects of Process Water Conductivity on Gold Leaching and Adsorption", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 158 - 161.

Conferences/Workshops/Seminars

- Resource Person, Talk on "Effective Mentoring and Graduate Student supervision", Workshop by Organisation for Women in Science for the Developing Work (OWSD) Ghana Chapter at its 25th Anniversary Celebration on "Setting the Stage for Achieving the Sustainable Development Goals (SDGs)", Great Hall, KNUST, Kumasi, Ghana, 8th- 9th November, 2018.
- Participant, Workshop on "Mentorship Role of Academic Tutors on Students' Academic and Psychological Well-being", organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Workshop on "Orderly Presentation of Investigation and Disciplinary Committee Report", organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Workshop on "Electronic Resources for Teaching and Research", organised by PQAU, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Workshop on "Enhancing Research Support at UMaT by Noguchi Memorial Institute", organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

Outreach Programmes/Extension Services

- Consultant, Minerals and Allied Industries.
- Reviewer, Journal of Hydrometallurgy, Journal of Minerals Engineering International and Ghana Mining Journal.

DR JOSEPH JENNINGS KOJO GORDON

Research Activities/Interests

- Biohydrometallurgy.
- Gold Beneficiation.
- Waste Effluent Treatment and Management.
- Reduction of Iron ore with Plastics and Biomass.
- Research in Manganese Recovery from Low Grade Manganese Carbonate using Bio-Oxidation Effluent.
- Recycling of End-of-Life Leather Shoes as Potential Source Chromium.
- Small-Scale Mining and Processing.

Recent Publications

- Commey, A. and **Gordon, J. J. K.** (2018), "Effect of Waste Glass Powder as Partial Supplement of Ordinary Portland Cement in Sandcrete Block Production", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 175 - 179.
- Mensah, M. and **Gordon, J. J. K.** (2018), "Influence of Reducing Gases from End-of-Life Plastics Incineration on Iron Ore Reduction", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 122 - 126.

Outreach Programmes/Extension Services

- Consultancy services to the minerals and allied industries.
- Committee member for training of Small-Scale Miners in Ghana.
- Committee member enquiry on apprenticeship certification and verification engagement for Newmont Ghana Gold.

DR CLEMENT KWASI OWUSU

Research Activities/Interests

- Froth Flotation.
- Hydrometallurgy.
- Mineral Surface Characterisations.
- Process Plant Optimisation.

Recent Publication

- Oboh, R. K., Ackah, K. and **Owusu, C.** (2018), "Cyanide Amenability Studies of Gold Ores-The Use of Design of Experiment (DOE)", *International Journal of Mining Science*, Vol. 4, No. 3, pp. 13 - 20.
- Dankwah, J. R., Yussif, I., Hinson, O. S., **Owusu, C. K.**, Agorhom, E. A. and Koshy, P. (2018), "Application of Microwave Technology to the Production of Iron Nuggets from the Sheini Iron Ore using Mixed Plastics Waste as Reductants", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 79 - 87.
- Abaka-Wood, G. B., **Owusu, C.**, Addai-Mensah, J. and Skinner, W. (2018), "Gravity Separation of Rare Earth Oxides from Hematite and Quartz Mixtures", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 1 - 9.
- Ackah, K. and **Owusu, C.** (2018). "The Regeneration of Fouled Resin", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 17 - 20.
- **Owusu, C.**, Ofori-Sarpong, G. and Amankwah, R. (2018), "The Effects of Process Water Conductivity on Gold Leaching and Adsorption", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 158 - 161.
- Kutiamé, L., Agorhom, E. A. and **Owusu, C.** (2018), "The Effect of Clay Minerals on Gravity Gold Recovery in the Palaeoplacer Gold Deposits of the Tarkwaian Systems of Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 191 - 196.

Outreach Programmes/Extension Services

- Team Member, Froth Flotation Investigations on Samples from Adamus Resources Limited, Ghana, Plant Investigations and Cyanide Amenability Studies towards Improving Flotation Circuit Performance, Perseus Mining (Ghana) Limited, Training on Metallurgical Accounting, Newmont Goldcorp Ghana, Akyem, Ghana, Training on Gold Extraction Process, Newmont Goldcorp Ghana, Akyem, Ghana.

DR ERIC AMINATEY AGORHOM

Research Activities/Interests

- Process Mineralogy/Geometallurgy.
- Copper-Gold Froth Flotation.
- Leaching/Aqueous Extraction.
- Mine Waste Characterisation.
- Process Plant Improvement/Optimisation/Training.

Recent Publications

- **Agorhom, E. A.**, Asare-Asher, S. N. and Woeko, S. B. (2018) "Synergistic Effect of Diethylenetriamine and Sodium Metabisulfite on Xanthate-Induced Flotation of Cu-Activated Pyrite", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 55 - 59.
- **Agorhom, E. A.**, Asare-Asher, S. N. and Owusu-Ansah, Y. (2018) "Impacts of Pulp Chemistry on Gold Particle Floatability", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 58 - 62.
- Kutiamé, L., **Agorhom, E. A.** and Owusu, C. K. (2018), "The Effect of Clay Minerals on Gravity Gold Recovery in the Palaeoplacer Gold Deposits of the Tarkwaian Systems of Ghana", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 191 - 196.
- Sarpong, S. T., Anyimah, A. C. and **Agorhom, E. A.** (2018), "Impact of Oxygen on Gold Cyanidation in Gold-Sulphide Concentrate", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR171 - 174.
- Woeko, S. B. and **Agorhom, E. A.** (2018), The Effects of Pre-Treatment of Flotation Concentrate on Gold Cyanidation, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 180 - 182.

Outreach Programmes/Extension Services

- Independent Short Course Panel Advisor, Australia Awards - Africa.
- Independent Post-Doctoral Panel Advisor, Australia Awards - Africa.
- Reviewer, Journal of Separation Science and Technology, Minerals Journal, Ghana Mining Journal.
- Training Programme for Gold Mining Companies.
- Refractory Gold Ore Flotation Prefeasibility Studies (FPS), Nzema Gold Mine, Ghana.
- Activated Carbon Characterisation and Selection, Newmont Ghana Limited, Ahafo Mine.

DR SAMUEL NKUM ASARE-ASHER

Research Activities/Interests

- Materials Engineering (Composite Materials and Metals Characterisation).
- Small Scale Mining Effluent Treatment.
- Statistical Process Control.
- Laboratory Assay Quality Control and Quality Assurance.

Recent Publications

- Agorhom, E. A., Asare-Asher, S. N. and Woeko, S. B. (2018), "Synergistic Effect of Diethylenetriamine and Sodium Metabisulfite on Xanthate-Induced Flotation of Cu-Activated Pyrite", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 56 - 60.
- Agorhom, E. A., Asare-Asher, S. N. and Owusu-Ansah, Y. (2018), "Impacts of Pulp Chemistry on Gold Particle Floatability", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 58 - 62.

Outreach Programmes/Extension Services

- Consultant, Carmeuse Lime Products Company Limited Statistical Process Control/Improvement of Plant Historical Data.
- Trainer, Gold Processing Training Course for Processing Plant Supervisors (Newmont Golden Ridge Limited - Akyem Mine).

ACADEMIC STAFF

Details of the academic staff of the Minerals Engineering Department are given in Table 9.

Table 9 Academic Staff of the Minerals Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Assoc Prof J. R. Dankwah	PhD (UNSW), MSc (NTNU), BSc (KNUST)	Assoc Prof, Head of Department and Vice Dean, Planning and Quality Assurance Unit	Ferrous Metallurgy, Polymer Science and Engineering, Electrometallurgy, High Temperature Metallurgical Processes, Nonferrous Process Metallurgy, Solid Waste Management, Recycling of Waste Polymers to Metals Production
Prof R. K. Amankwah	PhD (Queen's), MPhil, BSc (KNUST)	Professor and Dean, Faculty of Integrated Management Science	Biohydrometallurgy, Environmental Biotechnology, Application of Microwaves in Mineral Extraction, Gold Beneficiation, Geometallurgy, Mine-to-Mill Concept, Small-Scale Mining
Prof W. K. Buah	PhD (Leeds), MSc (Krivoy Rog Min. Inst)	Professor and Dean, School of Postgraduate Studies	Mineral Processing, Gold Beneficiation, Industrial Minerals
Assoc Prof Grace Ofori-Sarpong	PhD (Pennstate), MSc, BSc (KNUST)	Assoc Professor and Dean, Faculty of Mineral Resources Technology	Water Quality Monitoring, Biohydrometallurgy, Environmental Biotechnology, Application of Microwaves in Mineral Extraction, Gold Beneficiation, Aqueous Processes
Dr J. J. K. Gordon	PhD (UMaT), MPhil, BSc (KNUST)	Senior Lecturer	Biotechnology, Mineral Processing
Dr C. K. Owusu	PhD (UniSA), BSc (UMaT)	Lecturer	Flotation, Process Plant Optimisation, Statistical Analyses and Modelling of Metallurgical Data, Beneficiation of Precious Metals, Minerals Surface Characterisation
Dr E. A. Agorhom	PhD (UniSA), BSc (UMaT)	Lecturer	Froth Flotation, Process Mineralogy, Mineral Surface Characterisation, Beneficiation of Precious Minerals, Design of Fine Gold Upgrading Techniques

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr S. N. Asare-Asher	PhD (UniSA), BSc (UMaT)	Lecturer	Interfacial Phenomena (Colloids, Wettability, Nanomaterials), Water Treatment; Quality Assurance and Control, Reliability Engineering, Six Sigma, Change Management; Environmental Management
Mr C. E. Abbey*	MPhil, BSc (UMaT)	Lecturer	Small-Scale Mining, Computer Aided Process Analysis, Mineral Processing

* On Study leave

DEPARTMENT OF PETROLEUM ENGINEERING

INTRODUCTION

The Department was established in 2009 to provide manpower for the oil and gas industry of Ghana. During the 2018/2019 academic year, the Department had successes in various areas. Three new courses namely; Petroleum Refining and Petrochemical Engineering, Natural Gas Engineering and Petroleum Geoscience and Engineering which were developed by the Department are at the final stages of approval by the National Accreditation Board and will take off in the 2019/2020 academic year. SPE-UMaT Chapter represented Ghana at the International Petrobowl Quiz Competition held in Dallas, Texas in the United States of America on 24th September, 2018. The proposed new programme in Subsea Engineering under the future School of Petroleum Studies is under consideration for approval and is expected to start in 2019/2020 academic year.

ACTIVITIES OF ACADEMIC STAFF

DR SAVIOUR MANTEY

Research Activities/Interests

- Remotely Piloted Aircraft Systems for Mapping and Environmental Monitoring.
- Development of Geo-Information Systems.
- Remote Sensing for Environmental Analysis.
- GIS and Remote Sensing in Health.



Dr S. Mantey
Head

Recent Publications

- **Mantey, S.**, Tagoe, N. D. and Quayson, B. A. (2018), "A Study of Malaria Epidemic using Geospatial Information Systems (GIS)", *International Journal of Science and Research (IJSR)*, Vol. 7, No. 10, pp. 1604 - 609.
- **Mantey, S.** and Tagoe, N. D. (2018), "A Semi-Automatic Spatial Feature Extraction Tool for Minimising Errors in GIS Data Capture", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 34- 40.

Outreach Programme/Extension Services

- Member, National Vetting Team, Vetting of Small-Scale Miners as part of Sanitisation and Regularisation of Artisanal and Small-Scale Mining in Ghana.
- Consultant/Drone Pilot and Instructor, Drone Pilots for Operation Vanguard, Minerals Commission and Nation Builders Corps.
- Resource Person, National Tour to Mining Communities to Educate and Sensitise on the Dangers of Bad Mining Practices.
- Resource Person/Drone Pilot, National Monitoring of Galamsey and Small-Scale Gold Mining Sites across all Mining Communities in Ghana.

DR ERIC BRONI-BEDIAKO

Research Activities/Interests

- Drilling Optimisation.
- Environmental Management in the Oil and Gas Industry.
- Health and Safety Management in the Oil and Gas Industry.
- Petroleum/Mineral Economics.
- Offshore Technology.

Recent Publications

- Dankwa, O. K., Prince, P. O. and **Broni-Bediako, E.** (2018), "Evaluating the Effects of Monovalent and Divalent Salts on the Rheological Properties of Water Based Mud", *The Open Petroleum Engineering Journal*, Vol. 11, pp. 98 - 106.
- Amorin, R., **Broni-Bediako, E.**, Worlanyo, D. and Konadu, S. A. (2018), "The Use of Liquefied Petroleum Gas (LPG) as a Fuel for Commercial Vehicles in Ghana: A Case Study at Tema Community 1", *Current Journal of Applied Science and Technology*, Vol. 29, No. 2, pp. 1 - 8.
- **Broni-Bediako, E.** and Amorin, R. (2018), "Enhancing the Performance of Local Cement as an Alternative for Oil and Gas Well Cementing Operation", *Petroleum and Coal*, Vol. 60, No. 5, pp. 977 - 984.
- **Broni-Bediako, E.**, Onyije I. J. and Unwene, K. K. (2018), "Economic Effects of Oil Price Volatility on Developing Countries: A Case Study of an Oil Exporting Country", *International Journal of Economics and Management Sciences*, Vol. 7. No. 2, pp. 1 - 5.
- **Broni-Bediako, E.** and Amorin, R. (2018), "The Ghana Liquefied Petroleum Gas Promotion Programme: Opportunities, Challenges and the Way Forward", *Innovative Energy and Research*, Vol. 7. No. 2, pp. 1 - 5.

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Member, National Vetting Team, Vetting of Small-Scale Miners as part of Sanitisation and Regularisation of Artisanal and Small-Scale Mining in Ghana.
- Member, Committee to Review Curricula of Alpha College of Technology.
- Member, Multi-Sectoral Mining Integrated Project (MMIP) Committee to Review Project Budget.
- Member, 5th National Policy Summit, Best Western Atlantic Hotel, Takoradi, 9th - 10th December, 2018.
- Editorial Board Member, Petroleum Science and Engineering.
- Sectional Editor, Ghana Journal of Technology (GJT) and Ghana Mining Journal (GMJ).

DR RICHARD AMORIN

Research Activities/Interests

- Drilling Optimisation.
- Oil and Gas Gathering and Transportation.
- Application of Local Materials for Oilfield Applications.
- Health and Safety Management in the Oil and Gas Industry.
- Sustainability in the Usage of Local Materials for Oil Field Application.

Recent Publications

- **Amorin, R.**, Opoku, P. A. and Osei, E. (2019), Evaluation of Blended Lime-Stabilised Spent Synthetic-Based Drilling Mud and Cement for Oil Well Cementing Operations, *Advances in Geo-Energy Research*, Vol. 3, No. 2, pp. 141 - 148.
- Broni-Bediako, E. and **Amorin, R.** (2018), "Enhancing the Performance of Local Cement as an Alternative for Oil and Gas Well Cementing Operation", *Petroleum and Coal*, Vol. 60, No. 5, pp. 1 - 9.
- **Amorin, R.**, Broni-Bediako, E., Worlanyo, D. and Konadu, S. A. (2018), "The Use of Liquefied Petroleum Gas (LPG) as a Fuel for Commercial Vehicles in Ghana: A Case Study at Tema Community 1", *Current Journal of Applied Science and Technology*, Vol. 29, No. 2, pp. 1 - 8.
- **Broni-Bediako, E.** and Amorin, R. (2018), "The Ghana Liquefied Petroleum Gas Promotion Programme: Opportunities, Challenges and the Way Forward", *Innovative Energy and Research*, Vol. 7. No. 2, pp. 1 - 5.

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.

Outreach Programmes/Extension Services

- Reviewer, Ghana Journal of Technology (GJT) and Current Journal of Applied Science and Technology, India.

DR OHENEWAA KAKRA DANKWA

Research Activities/Interests

- Productivity Enhancement.
- Matrix Acidising Fluids Design.
- Oilfields Scales.
- Drilling Mud Filter Cakes Removal.
- Environmental and Safety Management.

Recent Publications

- **Dankwa, O. K.**, Opoku Appau, P. and Broni-Bediako, E. (2018), "Evaluating the Effects of Monovalent and Divalent Salts on the Rheological Properties of Water Based Mud", *The Open Petroleum Journal*, Vol. 11, pp. 3 - 11.
- **Dankwa, O. K.**, Gomah, A. S. N. and Opoku, A. P. (2018), "Comparison of the Economics and Performance of Horizontal and Vertical Wells", *International Journal of Petroleum and Petrochemical Engineering*, Vol. 4, No. 3, pp. 1 - 12.
- **Dankwa, O. K.**, Opoku, A. P. and Tampuri, M. (2018), "Performance Evaluation of Local Cassava Starch Flour as a Secondary Viscosifier and Fluid Loss Agent in Water Based Drilling Mud", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 68 - 76

Conferences/Workshops/Seminars

- Presenter/Moderator, SPE Nigeria Annual International Conference and Exhibition on “Diversification of the Nigerian Economy – The Oil & Gas industry as an Enabler”, Lagos, Nigeria, 6th - 8th August, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

DR SOLOMON ADJEI MARFO

Research Activities/Interests

- Application of Artificial Neural Network (ANN) in the Petroleum Industry.
- Subsea Pipeline Design and Modelling for Gas and Condensate Transportation.
- Evaluation of Agro-Waste for Oilfield Applications.
- Application of Oilfield Chemicals for Water and Sand Control in Oil Wells.

Recent Publications

- **Marfo, S. A.**, Owusu, W. A. and Amarfo, E. M. (2018), “Evaluation of Guinea Corn Husk Ash as Oil-Well Cement Slurry Extender”, *International Journal of Petroleum and Petrochemical Engineering (IJPPE)*, Vol. 4, No. 4, pp. 1 - 7.
- **Marfo, S. A.**, Opoku Appau, P. and Kpami, L. A. A. (2018), “Subsea Pipeline Design for Natural Gas Transportation: A Case Study of Côte D’Ivoire’s Gazelle Field”, *International Journal of Petroleum and Petrochemical Engineering (IJPPE)*, Vol. 4, No. 3, pp. 21 - 34.
- Ikpea, E., Appah, D. and **Marfo, S. A.** (2018), “Comparative Study of Normal and Acid Demulsifiers in Treating Aged Crude Oil Emulsions”, *SciFed Journal of Petroleum*, Vol. 2, No. 1, pp. 1 - 11.

Conferences/Workshops/Seminars

- Participant, University Examinations Portal Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 14th December 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Developing Industry Standards Conference (DISC), organised by Western Region Coastal Foundation, Takoradi, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students’ Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.

Outreach Programmes/Extension Services

- Reviewer, Data in Brief Journal, Ghana Mining Journal (GMJ).
- Member, Committee for Reviewing Draft Sitting Regulations on Nuclear Installations in Ghana.

DR HARRISON OSEI

Research Activities/Interests

- Fluid Flow and Separation.
- Fluid Dynamics.
- Reservoir Engineering.
- Production Engineering.

Recent Publications

- Osman, A. B., Ovinis, M., Faye, I., Hashim, F. M. and **Osei, H.** (2018), “An Optical Flow Measurement Technique based on Continuous Wavelet Transform”, *Journal of Applied Fluid Mechanics*, Vol. 11, No. 3, pp. 695 - 707.
- Bavoh, C. B., Lal, B., Khan, M. S., **Osei, H.** and Ayuob, M. (2018), “Combined Inhibition Effect of 1 -Ethyl-3 -methylimidazolium Chloride + Glycine on Methane Hydrate”, *IOP Conf. Series: Journal of Physics*, Vol. 1123, pp. 1 - 6.

Conferences/Workshops/Seminars

- Participant, University Examinations Portal Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 14th December 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Mentorship Role of Academic Tutors on Students’ Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.

DR ERIC THOMPSON BRANTSON**Research Activities/Interests**

- Reservoir Modelling and Simulation.
- Enhanced Oil Recovery.
- Computational Fluid Dynamics.
- Reservoir Engineering.
- Production Engineering.
- Drilling Engineering.
- Application of Artificial Intelligence Techniques in Petroleum.

Recent Publications

- **Brantson, E. T.**, Ju, B., Ziggah, Y. Y., Akwensi, P.H., Sun, Y., Wu, D. and Addo, B. J. (2019), "Forecasting of Horizontal Gas Well Production 1 Decline in Unconventional Reservoirs using Productivity, Soft Computing and Swarm Intelligence Models", *Natural Resources Research*, Vol, 28, No. 3, pp. 717-756.
- **Brantson, E. T.**, Ju, B., Omisore, B.O., Wu, D., Aphu, E. S. and Liu, N. (2018), "Development of Machine Learning Predictive Models for History Matching Tight Gas Carbonate Reservoir Production Profiles", *Journal of Geophysics and Engineering*, Vol. 15, No. 5, pp. 22 - 35.
- **Brantson, E. T.**, Ju, B. and Wu, D. (2018), "Numerical Simulation of Viscous Fingering and Flow Channelling Phenomena in Perturbed Stochastic Fields: Finite Volume Approach with Tracer Injection Tests", *Arabian Journal for Science and Engineering*, Vol. 43, No. 11, pp. 1 - 24.
- **Brantson, E. T.**, Ju, B., Wu, D. and Gyan, P. S. (2018), "Stochastic Porous Media Modelling and High-Resolution Schemes for Numerical Simulation of Subsurface Immiscible Fluid Flow Transport", *Acta Geophysica*, Vol. 66, No. 3, pp. 1 - 24.
- Aphu, E.S., **Brantson, E. T.**, Addo B. J. and Akunda, D. (2018), "Development of Finite Difference Explicit and Implicit Numerical Reservoir Simulator for Modelling Single Phase Flow in Porous Media", *Earth Sciences*, Vol. 7, No. 6, pp. 242 - 259.

Outreach Programmes/Extension Services

- Student Member, Society of Petroleum Engineers, China University of Geosciences (Beijing) Chapter, Society of Petroleum Engineers.

MR ERIC MENSAH AMARFIO**Research Activities/Interests**

- Reservoir Engineering/Simulation.
- Production Engineering.
- Nano-Drilling Fluids.
- Petroleum Economics.

Recent Publication

- Marfo, S. A., Ampoma, W. O. and **Amarfio, E. M.** (2018), "Evaluation of Guinea Corn Husk Ash as Oil-Well Cement Slurry Extender", *Ghana Mining Journal*, Vol. 4, No. 4, pp. 1 - 7

Conferences/Workshop/Seminars

- Participant, University Examinations Portal Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 14th December 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th -18th October, 2018.

Outreach Programmes/Extension Services

- Editor, International Journal of Petroleum and Petrochemical Engineering.
- Judge, 2018 Society of Petroleum Engineers Africa Regional Student Paper Contest, Accra, Ghana, 2018 Society of Petroleum Engineers Section Judge Awards.

MR DANIEL OCRAN**Research Activities/Interests**

- Petroleum Economics and Exploration policies.
- Reservoir Characterisation and Simulation.
- Production Optimisation.
- Well Test Analysis (WTA).
- Natural Gas Engineering.

Conferences/Workshops/Seminars

- Participant, Training Workshop on the Use of HPLC, UV-Spectrometer, GC, GCMS and AAS, Environmental Monitoring Laboratory, UMaT, 26th November - 7th December, 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

ACADEMIC STAFF

Details of the academic staff of the Petroleum Engineering Department are given in Table 10.

Table 10 Academic Staff of the Petroleum Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr S. Mantey	PhD (UMaT), MPhil (Cambridge), BSc (KNUST)	Senior Lecturer and Head of Department	Remotely Piloted Aircraft Systems for Mapping and Environmental Monitoring, Remote Sensing for Environmental Monitoring, Land Surveying
Dr E. Broni-Bediako	PhD, MPhil (UMaT), MSc (AUST), BSc (KNUST)	Senior Lecturer	Drilling Optimisation, Offshore Technology, Environmental Management, Health and Safety in Petroleum Industry, and Petroleum Economics
Dr R. Amarin	PhD (UMaT), MSc (AUST), BSc (KNUST)	Senior Lecturer	Drilling and Completion, Natural Gas Management, Transportation of Oil and Gas, Health and Safety in the Oil and Gas Industry, Sustainability.
Dr Ohenewaa K. Dankwa	PhD (UniPort), MSc (AUST), BSc (UMaT)	Lecturer	Formation Damage Control, Matrix Acidising, Oilfield Scales, Drilling Mud Filter Cakes Removal, Environmental and Safety Management
Dr S. A. Marfo	PhD (UniPort) M.Eng (Belgrade), BSc (KNUST), RES, NREP	Lecturer and Faculty Examinations Officer	Evaluation of Local Raw Materials and Agro-Waste for Oilfield Application, Application of Oilfield Chemicals for Water and Sand Control in Oil Wells, Directional Drilling Technology, Oil and Gas Pipeline Transportation Design
Dr H. Osei	PhD (UTP), MSc (AUST), BSc (KNUST)	Lecturer	Multiphase Flow, Fluid Dynamics, Separation Technology, Reservoir and Production Engineering
Dr E. T. Brantson	PhD (CUGB), MSc (AUST), BSc (UMaT)	Lecturer	Reservoir Modeling and Simulation, Enhanced Oil Recovery, Computational Fluid Dynamics, Application of Artificial Intelligence Techniques in Petroleum
Mr E. M. Amarfo	MSc (AUST), BSc (KNUST)	Lecturer and Departmental Training Officer	Reservoir Engineering, Production Engineering, Nano-fluids, Drilling and Well Completion, Petroleum Economics
Mr D. Ocran	MSc (AUST) BSc (UMaT)	Assistant Lecturer	Petroleum Economics, Reservoir Characterisation and Simulation, Oil and Gas Production Optimisation, Well Test Analysis

DEPARTMENT OF ENVIRONMENTAL AND SAFETY ENGINEERING

INTRODUCTION

The Environmental and Safety Engineering Department was established in the year 2012 with the mandate to run degree programmes in the fields of Safety and Environmental Engineering. The aim of the Department is to provide quality broad-based education and training on safety and environmental issues that will empower graduates to meet the challenges of the engineering profession in Ghana and globally. In addition to teaching and promotion of knowledge, the Department is also mandated to provide professional services through extension and consultancy activities in both Safety and Environmental Engineering. To fulfil this obligation, the University with the support of the Danish Development Agency (DANIDA) and the Government of Ghana has established an ultra-modern Environmental Monitoring Laboratory which conducts various forms of environmental quality analysis for industries and communities. This unique facility is operated by highly qualified staff of the Environmental and Safety Engineering Department. The year in retrospect saw the Department record some outstanding events and achievements. Notable among them were: the establishment of an Ultra-Modern Environmental Monitoring Laboratory, the training of Departmental Staff on Laboratory Processes by Staff of Business Academy Aarhus School of Applied Sciences, Denmark, produced the Best Graduating Student for the year 2018 and the winning the Male Category of the 2018 Vice Chancellor's Challenge Cup. Currently, the Department is making assiduous arrangements to roll out postgraduate programmes in Occupational Health and Safety Engineering as well as Environmental Engineering.

ACTIVITIES OF ACADEMIC STAFF

ASSOC PROF SAMUEL AGYARKO NDUR

Research Activities/Interests

- Arsenic Sequestration using Local Materials.
- Water Quality Studies in some Mining Districts of Ghana.
- Surface and Groundwater Interactions in Mining Environments.
- Mine Waste Management.
- Petrochemical Engineering

Recent Publications

- Duker, A. A., **Ndur, S.**, Osei, E. M. J., Acheampong, I. A. and Apedo, G. A. (2018), "Drinking Arsenic Water may Contribute to Mycobacterium Ulcerans Infection", *Archives of Epidemiology*, Vol. 2018, No. 2, pp. 1 – 7.
- Minkah, P. E., Fosu S., **Ndur, S.** and Asante, E. O. (2018), "Computer Simulation and Modelling of Chlorine Monitoring and Regulation System in Water and Waste Water Treatment", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 69 - 78.
- Souleymane, A. A., Quaicoe, I., **Ndur, S.** and Dankwa, J. A. (2018), "Pyrolytic Decomposition of End-of-Life Vehicle Tyres in Ghana into Fuel using a Locally-manufactured Reactor", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 10 - 16.

Outreach Programmes/Extension Services

- Member, National Technical Committee - TC - 22 - Materials, Equipment and Offshore Structures for Petroleum, Petrochemical and Natural Gas Industries.
- Consultant, Minerals and Allied Industries.
- Reviewer, Journal of Earth and Environmental Sciences, Ghana Mining Journal, Ghana Journal of Technology.
- Council Member, Community University College, Takoradi, Ghana.

DR ISHMAEL QUAICOE

Research Activities/Interests

- Environmental, Occupational Health and Safety Management.
- Colloid and Interfacial Science.
- Geometallurgy, Hydrometallurgy and Mine-to-Mill Interface.
- Metallurgical Plant Design and Process Control.
- Artisanal and Small-Scale Mining and Quarrying.
- Waste-to-Energy and Waste Resource Management.
- Sustainability, Livelihood and Extractive for Development.

Recent Publications

- Souleymane, A. A., **Quaicoe, I.**, Ndur, S. A. and Dankwa, J. A. (2018), "Pyrolytic Decomposition of End-of-Life Vehicle Tyres in Ghana into Fuel using a Locally-manufactured Reactor", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 10 - 16.
- Kyeremeh, S. K., **Quaicoe, I.**, Nyarko, S. Y. and MacCarthy, J. (2018), "The Effectiveness of Moringa Oleifera Seed Extract as



Assoc Prof Samuel A. Ndur
Head

a Bio-Coagulant for Mine Waste Water Treatment”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 84 - 90.

Conferences/Workshop/Seminars

- Participant/Presenter, Harnessing the Extractive Industries for Development in Sub-Sahara Africa 2018 (Ex4Dev18), University of Surrey, UK, 7th - 9th November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students’ Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant/Presenter, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Sectional Editor/Reviewer, Ghana Mining Journal, Ghana Journal of Technology.
- Reviewer, Journal of the Minerals, Metals, and Materials Society.
- Trainer, Sustainable Mining Practices - Training Programme for Small-Scale Miners in Ghana.

DR JENNIFER MACCARTHY

Research Activities/Interests

- Environmental Pollution and Control.
- Water and Wastewater Treatment.
- Hydrometallurgy (Leaching/Aqueous Extraction).
- Thickening and Dewatering.
- Particle Interactions and Rheology.
- Colloid and Interfacial Science.

Recent Publications

- Kyeremeh, S. K., Quaicoe, I., Nyarko, S. Y. and **MacCarthy, J.** (2018), “The Effectiveness of Moringa Oleifera Seed Extract as a Bio-Coagulant for Mine Waste Water Treatment”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 84 - 90.

Outreach Programmes/Extension Services

- Reviewer, Ghana Mining Journal, Ghana Journal of Technology.
- Team Member, Training Programme on “Gold Processing Technology” for Plant Supervisors at Newmont Golden Ridge, Akyem Mine, Sustainable Mining Practices, Training Programme for Small-Scale Miners in Ghana.

DR SHADRACK FOSU

Research Activities/Interests

- Environmental Chemistry and Process Engineering.
- Environmental Pollution and Control.
- Water and Wastewater Treatment.
- Ore Characterisation and Process Mineralogy.
- Mineral Flotation and Aqueous Metallurgy.
- Simulation and Computer-Aided Process Control and Instrumentation.

Recent Publications

- Minkah, P. E, **Fosu, S.**, Ndur, S. A. and Asante, E. O. (2018), “Computer Simulation and Modelling of Chlorine Monitoring and Regulation System in Water and Waste Water Treatment”, *Ghana Journal of Technology*, Vol. 3, No.1, pp. 69 - 78.
- Abaka-Wood, G. B., **Fosu, S.**, Addai-Mensah, J. and Skinner, W. (2018), “Kinetic Consideration in the Flotation of Monazite, Hematite and Quartz using Sodium Oleate”, *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. MR 10 - 16.

Outreach Programmes/Extension Services

- Reviewer, Advanced Powder Technology Journal, Journal of Separation Science and Technology, Ghana Mining Journal and Ghana Journal of Technology.
- Member, Editorial Board, Current Works in Mineral Processing Journal.
- Team Member, Training Programme on Gold Processing Technology for Plant Supervisors at Newmont Golden Ridge, Akyem Mine.
- Team Member, Sustainable Mining Practices, Training Programme for Small Scale Miners in Ghana.

DR ERIC STEMN**Research Activities/Interests**

- Principal Hazard Management of the Extractive Industry.
- Occupational Health and Safety of the Extractive Industry.
- Learning from Unwanted Events.
- Occupational Health and Safety of Small and Medium Enterprises, Particularly Artisanal and Small-Scale Mining.
- GIS and Remote Sensing for Environmental Management.
- Waste Management

Recent Publications

- Han, S., Chen, H., **Stemn, E.** and Owen, J. (2019), "Interactions between Organisational Roles and Environmental Hazards: The Case of Safety in the Chinese Coal Industry", *Resources Policy*, Vol. 60, pp. 36 - 46.
- **Stemn, E.**, Bofinger, C., Cliff, D. and Hassall, M. (2019), "Investigating the Maturity of Incident Investigations of the Ghanaian Mining Industry and Its Effect on Safety Performance", *Safety Science*, Vol. 5, No. 1, pp. 1 - 25.
- **Stemn, E.**, Bofinger, C., Cliff, D. and Hassall, M. E. (2019), "Examining the Relationship between Safety Culture Maturity and Safety Performance of the Mining Industry", *Safety Science*, Vol. 113, pp. 345 - 355.
- **Stemn, E.**, Hassall, M. E., Cliff, D. and Bofinger, C. (2019), "Incident Investigators' Perspectives of Incident Investigations Conducted in the Ghanaian Mining Industry", *Safety Science*, Vol. 112, pp. 173 - 188.
- Amoah, N. and **Stemn, E.** (2018), "Siting a Centralised Processing Centre for Artisanal and Small-Scale Mining - A Spatial Multi-Criteria Approach", *Journal of Sustainable Mining*, Vol. 17, No 4, pp. 215 - 225.
- Bansah, K. J., Dumakor-Dupey, N. K., **Stemn, E.** and Galecki, G. (2018), "Mutualism, Commensalism or Parasitism? Perspectives on Tailings Trade between Large-Scale and Artisanal and Small-Scale Gold Mining in Ghana", *Resources Policy*, Vol. 57, pp. 246 - 254.
- Han, S., Chen, H., Harvey, M.-A., **Stemn, E.** and Cliff, D. (2018), "Focusing on Coal Workers' Lung Diseases: A Comparative Analysis of China, Australia, and the United States", *International Journal of Environmental Research and Public Health*, Vol. 15, No. 11, pp. 1 - 26.
- **Stemn, E.** (2018), "Analysis of Injuries in the Ghanaian Mining Industry and Priority Areas for Research", *Safety and Health at Work*, pp. 1 - 15.
- **Stemn, E.**, Bofinger, C., Cliff, D. and Hassall, M. E. (2018), "Failure to Learn from Safety Incidents: Status, Challenges and Opportunities", *Safety Science*, Vol. 101, pp. 313 - 325.

Conferences/Workshops/Seminars

- Participant, SME Annual Conference and Expo and CMA 121st National Western Mining Conference, Denver, Colorado, USA, 24th - 27th February, 2019.
- Participant, Sustainable Mineral Institute Research Higher Degree Conference, Brisbane, Australia, 22nd November, 2018.

Outreach Programmes/Extension Services

- Reviewer, *Safety Science*, *Environmental Science and Pollution Research*, *Waste Management and Research*, *International Journal of Environment and Waste Management*.

MR THOMAS WI-AFEDZI**Research Activities/Interests**

- Soil Chemistry.
- Spectroscopy.
- Clay Minerals.
- Bio Char Technology.
- Groundwater Remediation.

Conferences/Seminars/Workshop

- Participant, Seminar on Environmental Engineering, NCHU, Taichung, Taiwan, 14th November, 2018.

Outreach Outreach Programmes/Extension Services

- Participant, CTCI Foundation Enterprise Visit, Northern Taiwan, 29th – 31st August, 2018.

MISS VIVIAN ISABELLA SESHIE**Research Activities/Interests**

- Environmental Impact Assessment.
- Municipal Solid Waste Management.
- Waste Characterisation.

- Water Quality.
- Waste Water Analysis.

Recent Publications

- **Seshie, V. I.** and Damoah, A. (2018), "Municipal Solid Waste Quantification at Higher Learning Institution: A Study at the University of Mines and Technology (UMaT) Halls of Residence", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 116 - 121.
- **Seshie, V. I.** and Amoah, N. A. (2018), "Biosorption of Chromium, Lead and Nickel by *Solanum Tuberosum*", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 110 - 115.

Conferences/Workshops/Seminars

- Participant, Environmental Impact Assessment Scoping and Terms of Reference Training, Institute of Environmental Studies, Accra, Ghana, 27th - 29th June, 2018.

MR FRANCIS KRAMPAH

Research Activities/Interests

- Occupational and Environmental Exposure Assessment.
- Heavy Metal Exposure, Behaviour and Sources.
- Risk Assessment and Management.
- Occupational Health and Safety Management.
- Water and Air Quality.

Recent Publications

- **Krampah, F.**, Nyarko, S. Y., Danlogo, K. and Sanful, P. (2019), "Application of Pollution Indices in the Assessment of Heavy Metal Contamination of Surface Sediments of River Bonsa", *Journal of Geoscience and Environment Protection*, Vol. 7, pp. 176 - 189.
- **Krampah, F.**, Lartey-young, G., Sanful, O. P., Dawohoso, O. and Asare, A. (2019), "Hydrochemistry of Surface and Groundwater in the Vicinity of a Mine Waste Rock Dump: Assessing Impact of Acid Rock Drainage (ARD)", *Journal of Geoscience and Environment Protection*, Vol. 7, No. 1, pp. 52 - 67.
- Joe-Asare, T., Otoo, S., **Krampah, F.** and Seshie, V. I. (2018), "Comparative Assessment of Mine Rehabilitated Soil and Unmined Soil - A Case study of Golden Star Wassa Limited", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ES 69 - 83.

Conferences/Workshops/Seminars

- Participant, African Conference on Occupational Health and Safety, Accra, Ghana 29th - 31st October, 2018.
- Participant, Seminar on Chemical Weapons Convention Wuppertal, Germany 24th - 28th September, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Trainer, National Sustainability Training Programme for Small-Scale Miners.

ACADEMIC STAFF

Details of the academic staff of the Environmental and Safety Engineering Department are given in Table 11.

Table 11 Academic Staff of the Environmental and Safety Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Assoc Prof S. Ndur	PhD (New Mexico Tech), MSc (MIOG)	Associate Professor, Head of Department and Vice Dean, Faculty of Minerals Resources Technology	Geochemistry, Aqueous Processes, Mine Waste Characterisation and Management, Occupational Health Management, Corporate Social Responsibility, Environmental Modelling
Dr I. Quaicoe	PhD (UniSA), BSc (UMaT)	Lecturer	Geomaterials, Hydrometallurgy/ Agglomeration, Metallurgical Plant Design and Process Control, Colloid and Surface Science, Environmental Management, Water Quality Management, Artisanal and Small-Scale Mining and Processing Industrial Minerals
Dr Jennifer MacCarthy	PhD (UniSA), BSc (UMaT)	Lecturer, Departmental Examination Officer	Hydrometallurgy, (Leaching/Aqueous extraction), Thickening and Dewatering, Particle Interactions and Rheology, Colloid and Interfacial Science
Dr S. Fosu	PhD (UniSA), BSc (UMaT)	Lecturer, Departmental Training Officer	Mineral Separation Process, Process Mineralogy, Colloid and Surface Chemistry, Hydrometallurgy/Aqueous Metallurgy, Metallurgical Balances and Efficiency, Environmental Management, Ore Characterisation
Dr E. Stemn *	PhD (UNSW), MSc (KNUST), BSc (UMaT)	Lecturer	Urban Environmental Pollution, GIS and Remote Sensing for Environment Studies, Occupational Health and Safety
Miss Vivian I. Seshie	MSc (KNUST), BSc (Cape Coast)	Research Fellow	Environmental Impact Assessment, Municipal Solid Waste Management, Waste Characterisation, Occupational Health and Safety
Mr T. Wi-Afedzi*	MSc (NCHU), BSc (KNUST)	Lecturer	Soil Chemistry, Water Chemistry, Spectroscopic Analysis (X-ray Diffraction, X-ray Absorption, Infrared, UV-Vis), Biochar, Clay Minerals, Environmental Analysis.
Mr F. Krampah	MSc (USW), BSc (Cape Coast)	Assistant Lecturer	Occupational and Environmental Exposure Assessment, Heavy Metal Exposure, Behaviour and Sources, Risk Assessment and Management, Occupational Health and Safety Management, Water and Air Quality

* On Study leave

The Administrative and Technical Staff of the Faculty are presented in Table 12.

Table 12 Administrative and Technical Staff of the Faculty

Name	Qualification	Designation	Department
Mrs Priscilla A. Aryeh	MPA (Ghana), BA (KNUST)	Principal Administrative Assistant	Environmental and Safety Engineering
Mrs Harriet Asiamah	BMS (Cape Coast)	Senior Administrative Assistant	Minerals Engineering
Ms Bevelyn Koomson	BA (Ghana)	Senior Administrative Assistant	Geological Engineering
Ms Barbara C. Mensah	BA (Cape Coast)	Senior Administrative Assistant	Geomatic Engineering
Mr Linus F. Afful	BA (KNUST)	Senior Administrative Assistant	Petroleum Engineering
Mr Bashirudin Adam	BMS (Cape Coast), HND (C Poly)	Administrative Assistant	Mining Engineering
Mr Socrates K. Larweh	BSc (UMaT)	Principal Laboratory Technician	Petroleum Engineering
Mr Joseph K. Adibah	BSc (UMaT)	Senior Laboratory Technician	Geomatic Engineering
Mr Meshack Tei	BSc (UMaT)	Senior Laboratory Technician	Environmental and Safety Engineering
Mr Francis Stephens	HND (Martires del Giron)	Senior Laboratory Technician	Minerals Engineering
Mr David Yankson	HND (T'di Poly)	Senior Laboratory Technician	Environmental and Safety Engineering
Mr Kwabena A. Appiah	HND (K Poly)	Senior Laboratory Technician	Petroleum Engineering
Mr Daniel Adu-Gyamfi	HND (K Poly)	Laboratory Technician	Environmental and Safety Engineering
Mr Celestine A. Poku	HND (K Poly)	Laboratory Technician	Petroleum Engineering
Mr Daniel O. Boateng	Certificate (UMaT)	Laboratory Technician	Geological Engineering
Mr Edwin Dzelu	C & G (Lond)	Laboratory Technician	Geological Engineering

Name	Qualification	Designation	Department
Mr Augustine Kwofie	MET Part III	Laboratory Technician	Mining Engineering
Mr Endswell N. Cudjoe	HND (T'di Poly)	Laboratory Technician	Geological Engineering
Mr Abdul-Rahman Abdullah	HND (T'di Poly)	Laboratory Technician	Geological Engineering

FACULTY OF ENGINEERING

INTRODUCTION

The Faculty of Engineering is made up of five Academic Departments namely Mechanical Engineering, Electrical and Electronic Engineering, Mathematical Sciences, Computer Science and Engineering and Renewable Energy Engineering. With the exception of Renewable Energy Engineering, all the Departments offer both undergraduate and postgraduate programmes. In the year under review, five new academic staff joined the Faculty including a Professor on sabbatical at Department of Computer Science and Engineering. The Faculty also had four Seminars for academic staff to make presentations on on-going research.

STAFF OF THE FACULTY

The following are staff of the Dean's office:

Assoc Prof Anthony Simons	-	Dean
Dr Solomon Nunoo	-	Vice Dean
Mr Isaac Addei	-	Assistant Registrar/Faculty Officer
Mrs Michaelina Ansah	-	Faculty Accounts Officer



Assoc Prof A. Simons
Dean

POSTGRADUATE PROGRAMMES IN THE FACULTY

Table 13 Postgraduate Programmes

Department	Postgraduate Programme
Mechanical Engineering	MSc, MPhil, PhD (Special Programme for staff) Mechanical Engineering
Electrical and Electronic Engineering	MSc, MPhil, PhD Electrical and Electronic Engineering
Mathematical Sciences	MSc, MPhil, PhD Mathematics
Computer Science and Engineering	PhD (Special Programme for staff) Computer Science and Engineering

UNDERGRADUATE STUDENTS ENROLMENT

The Faculty has nine hundred and nineteen (919) undergraduate students. The breakdown is shown in Table 14.

Table 14 Undergraduate Students Enrolment

Programme	Year One	Year Two	Year Three	Year Four	Total
BSc Mechanical Engineering	55	61	57	47	220
BSc Electrical and Electronic Engineering	56	58	53	49	216
BSc Mathematical Sciences	44	46	30	36	156
BSc Computer Science and Engineering	53	60	58	46	217
BSc Renewable Energy Engineering	55	55	-	-	110
Total	263	280	198	178	919

POSTGRADUATE STUDENTS ENROLMENT

There are sixty-seven (67) postgraduate students in the Faculty. The breakdown is shown in Table 15.

Table 15 Postgraduate Students Enrolment

Department	Programmes			
	MSc	MPhil	PhD	Total
Mechanical Engineering	1	2	3	6
Electrical and Electronic Engineering	13	14	6	33
Mathematical Sciences	-	10	16	26
Computer Science and Engineering	-	-	2	2
Total	14	26	27	67

DEPARTMENT OF MECHANICAL ENGINEERING

INTRODUCTION

The Department runs a four-year BSc degree programme in Mechanical Engineering. The programme is integrated with taught courses, seminars, fieldtrips, laboratory, workshop practices and programme internship to equip graduates with both theoretical and practical knowledge. The Department also offers two Master's Degree programmes. These are MSc in Mechanical Engineering (Thermal Power and Fluid Engineering) and MPhil in Mechanical Engineering. The Department continues to run a three-year training programme in Integrated Plant Mechanics for selected mining companies.

ACTIVITIES OF ACADEMIC STAFF

MR SETH PADMORE AGBOMADZI

Research Activities/Interests

- Effect of Channel Shape on Boundary Shear Stress Distribution in Flow Channels.
- Modelling of Varied Flow Functions for the Computation of Varied Flow Profiles in Flat Bed Circular Drainage Channels.
- Procedure Formulation for the Design of Pipe Haulage System for Underground Mines.
- Application of Computational Fluid Dynamics for the Solution and Prediction of Complex Flow Behaviours.
- Performance Analysis of Thermal Power Plants.



Mr Seth P. Agbomadzi
Head

Outreach Programmes/Extension Services

- Manpower Development for selected Mining Companies and Mining Servicing Companies, e.g. Sandvik, Liebherr, etc.

ASSOC PROF ANTHONY SIMONS

Research Activities/Interests

- Heat Transfer.
- Internal Combustion Engines.
- Non-Destructive Testing.
- Earth Moving Machinery.
- Alternative Fuels.

Recent Publications

- **Simons, A.**, Amankwah, D., Avegnon, K. L. M. and Adaze, E. (2018), "Finite Element Analysis of Electrically Powered Cable Stripper", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 1 - 8.
- Agyarko, K., Appiah, S. T. and **Simons, A.** (2018), "Application of Generalised Estimating Equations to Non-Life Insurance Claims Reserve in Ghana- A Case Study", *International Journal of Sciences*, Vol. 42, No. 1, pp. 72 - 80.
- **Simons, A.**, Amankwah, D. K., Avegnon, K. L. M. and Adaze, E. (2018), "Design of Electrically Powered Cable Stripper for Nexans Kabel Metal (Gh) Limited", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 12 - 17.
- **Simons, A.**, Ehurone, M. and Avegnon, K. L. M. (2018), "Design of an Alignment Device for Undercarriage Track Link of Earthmoving Machines at Mantrac Worksop (Kumasi)", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 18 - 22.
- **Simons, A.**, Quartey G. and Buabeng, A. (2018), "Technical and Vocational Education Training (TVET) in Ghana's Industrial Development", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 23 - 28.
- **Simons, A.**, Brew, L., Buabeng, A. and Nador, H. (2018) Analysis of Carbon Dioxide Emission in Ghana, *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 1 - 6.

Outreach Programmes /Extension Services

- Chief Auditor, Technical Factory Audit, (WAMCO I).
- Chairman, National Vetting Team, Vetting of Small-Scale Miners as part of Sanitisation and Regularisation of Artisanal and Small-Scale Mining in Ghana.
- Panel Member, National Accreditation Board (Mechanical Engineering Programmes in Ghana).
- Reviewer, *International Journal of Technology and Management*, Koforidua Polytechnic, Ghana.
- Instructor, Metallurgical Training (MET) Team which also Provides Training for the Mining Industry.
- Inspector, Structural Integrity Assessment on Flotation and Biox Plant, Golden Star, Bogoso Mine.

MR EMMANUEL MAWULI SECKLEY**Research Activities/Interests**

- Design and Optimisation of thin-walled elements including pipelines and pressure vessels.
- Fracture Mechanics of Advanced Materials.

MR NOAH YAKAH**Research Activities/Interests**

- Internal Combustion Engine.
- Automobile Engineering.
- Heat and Power Systems.

MR ERIC OFORI-NTOW JNR**Research Activities/Interests**

- Production Optimisation.
- Design Modification.
- Automobile Engineering.
- Maintenance Engineering.

MR AUGUSTINE AKUOKO KWARTENG**Research Activities/Interests**

- Propulsion systems.
- Convective Heat.
- Biomass Energy Generation.
- Solar Absorption.
- Analytical Methods in Fluid.

MR EDWARD YIN**Research Activities/Interests**

- Machine Design
- Production Engineering and Management
- Failure Analysis of Machine Components
- Modeling and Simulation

GIDEON QUARTEY**Research Activities/Interests**

- Modelling and Simulation of Wear in Machine Elements.
- Analysis and Optimisation of Machine Elements.

MR ERNEST ADAZE**Research Activities/Interests**

- Multiphase Flow Modelling (Applications in Oil and Gas Wells).
- Computational Fluid Dynamics (CFD) Simulation.

Recent Publications

- **Adaze, E.**, Badr, H. M. and Al-Sarkhi, A. (2019), "CFD Modeling of Two-Phase Annular Flow Toward the Onset of Liquid Film Reversal in a Vertical Pipe", *Journal of Petroleum Science and Engineering*, Vol. 175, pp. 755 - 774.
- **Adaze, E.**, Al-Sarkhi, A., Badr, H. M. and Elsaadawy, E. (2018), "Current Status of CFD Modeling of Liquid Loading Phenomena in Gas Wells: A Literature Review", *Journal of Petroleum Exploration and Production Technology*, pp. 1 - 15.
- Simons, A., Amankwah, D., Avegnon, K. L. M. and **Adaze, E.** (2018), "Finite Element Analysis of Electrically-Powered Cable Stripper", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 1 - 8.

ACADEMIC STAFF

Details of the academic staff of the Mechanical Engineering Department are given in Table 16.

Table 16 Academic Staff of the Mechanical Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr S. P. Agbomadzi	MSc (Newcastle), BSc (KNUST)	Senior Lecturer, Head of Department	Thermofluid Engineering, Hydraulic Structures and Design
Assoc Prof A. Simons	PhD (St. Pet Min Inst), MSc (Belarusian - Russian)	Associate Professor, Dean of Faculty of Engineering	Hoisting, Earth Moving Machinery and Equipment, Mining Transport Machinery
Mr E. M. Seckley	MSc, BSc (KNUST)	Lecturer	Solid Body Mechanics and Strength of Materials
Mr N. Yakah	MSc (Stockholm), BSc (KNUST)	Lecturer	Internal Combustion Engines, Sustainable Energy Technologies (Renewable and Non-renewables)
Mr E. Ofori-Ntow Jnr*	MSc (KTH), BSc (UMaT)	Lecturer	Production Engineering and Management.
Mr A. A. Kwarteng *	MSc, BSc (KNUST)	Lecturer	Fluid Mechanics, Thermal Power Systems Engineering
Mr Edward Yin	MSc (JKUAT), BSc (UMaT)	Assistant Lecturer	Machine Design. Production Engineering and Management
Mr G. Quartey	MSc (JKUAT), BSc (UMaT)	Assistant Lecturer	Design and Production of Machine Components
Mr E. Adaze	MSc (KFUPM), BSc (UMaT)	Assistant Lecturer	Thermofluid Sciences including Fluid Mechanics, Heat Transfer, Thermodynamics, Welding

*On Study leave

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

INTRODUCTION

The Department has strong expertise in Electrical Power Systems, Industrial Automation, Control Engineering and Telecommunications. It runs a four-Year BSc degree programme in Electrical and Electronic Engineering. The four-year programme is integrated with taught courses, seminars, fieldtrips, laboratory, workshop practices and programme internship to equip graduates with both theoretical and practical knowledge in the field of engineering. The Department also runs MSc, MPhil and PhD degree programmes in Electrical and Electronic Engineering.

ACTIVITIES OF ACADEMIC STAFF

DR SOLOMON NUNOO

Research Activities/Interests

- Statistical Signal Processing with Emphasis on Adaptive Filtering.
- Compressive Sampling.
- Wireless Communications.
- Energy Management.



Dr Solomon Nunoo
Head

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, DIES Ghana National Multiplication Training, organised by DAAD, Prampram, Ghana, 27th - 29th August, 2018.
- Participant, Workshop on Enhancing Research Support at the University, organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

MR ERWIN NORMANYO

Research/Activities Interests

- Industrial Automation.
- Industrial Energy Management.
- Instrumentation Systems.
- Control Engineering.
- Automated Electric Drives.
- Mechatronics.

Recent Publication

- Ofosu, R. A., Kaberere, K. K. and **Normanyo, E.** (2018), "Magnetostrictive Amorphous Wire as an Alternative Means of Frequency Measurement for Micro Hydro Power Plants", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 7 - 13.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.

DR JOSEPH CUDJOE ATTACHIE

Research Activities/Interests

- Power Quality.
- High Voltage Engineering.
- Power Systems and Networks.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

DR JOHN KOJO ANNAN**Research Activities/Interests**

- Reliability Assessment of Renewable Energy Systems.
- Control Systems.
- Applications of MATLAB and AutoCAD.

Recent Publication

- **Annan, J. K.,** Effah, F. B. and Quaicoe, J. E. (2018), "Reliability Assessment of Battery-Assisted and Electrolyser-Battery Integrated PV Systems for Off-Grid Applications", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 14 - 23.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

MR SETH OFORI**Research Activities/Interests**

- Broadband Network.
- Signal Processing.
- Mobile Communication.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

MR PHILIP BLEWUSHIE**Research Activities/Interests**

- Power Systems.
- Instrumentation and Control.

MR FUSEINI MUMUNI**Research Activities/Interests**

- Machine Vision.
- Artificial Intelligence.
- Machine Learning and Convolutional Neural Networks.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

MR EMMANUEL ADDO**Research Activities/Interests**

- Satellite communications systems.
- Design and Implementation of Copper and Fibre Optic Networks.

MR ROBERT AGYARE OFOSU**Research Activities/Interests**

- Control Engineering.
- Industrial Automation.
- Embedded Systems.
- Frequency Control of Power System.

Recent Publication

- **Ofosu, R. A.**, Kaberere, K. K. and Normanyo, E. (2018), "Magnetostrictive Amorphous Wire as an Alternative Means of Frequency Measurement for Micro Hydro Power Plants", *Ghana Journal of Technology*, Vol. 2, No.2, pp. 7 - 13.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

MR ISAAC AIDOO**Research Activities/Interests**

- Power Generation and Stability.
- Voltage Management for Smart Grid.
- Renewable Energy.

Recent Publication

- **Aidoo, I. K.**, Fletcher, K. K. and Asiedu-Asante, B. A. (2018), "Innovation-The Key for Developing Countries", *International Journal of Innovation in Education*, Vol. 5, No. 2, pp. 142 - 163.

Conferences/Workshops/Seminars

- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd May, 2018.

MS AMA BADUBA ASIEDU-ASANTE**Research Activities/Interests**

- Instrumentation.
- Automation and Control.
- Control of Renewable Energy Sources.

Recent Publication

- Aidoo, I. K., Fletcher, K. K. and **Asiedu-Asante, B. A.** (2018), "Innovation-The Key for Developing Countries", *International Journal of Innovation in Education*, Vol. 5, No. 2, pp. 142- 163.

Conferences/Workshops/Seminars

- Participant, University Examinations Portal Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Enhancing Research Support at the University Workshop for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd May, 2018.

ACADEMIC STAFF

Details of the academic staff of the Electrical and Electronic Engineering Department are given in Table 17.

Table 17 Academic Staff of the Electrical and Electronic Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr S. Nunoo	PhD (Skudai) MPhil, BSc (UMaT)	Senior Lecturer and Head of Department	Compressive Sampling, Signal Processing, Wireless Communications, Energy Management
Mr E. Normanyo	MSc (Kharkov)	Senior Lecturer	Automated Electric Drives, Industrial Automation, Instrumentation and Control, Control Engineering
Dr J. C. Attachie	PhD (UMaT), MSc (Kharkov)	Lecturer	Power Systems and Networks, High Voltage Engineering, Power Quality
Dr J. K. Annan	PhD, MPhil, BSc (UMaT)	Lecturer and Departmental Examinations Officer	Reliability Assessment, Control Systems, Computer-Aided Design
Mr S. Ofori	MSc (London MET), BSc (KNUST)	Lecturer	Signal Processing, Broadband Networks, Mobile Communication
Mr P. Blewushie *	MPhil, BSc (UMaT)	Lecturer	Power Systems, Instrumentation and Control
Mr F. Mumuni	MSc (St. Petersburg)	Lecturer	Control Engineering, Embedded Systems, Industrial Automation
Mr E. Addo	MSc (St. Petersburg)	Lecturer, Departmental Training Officer	Telecommunication Switching Systems
Mr R. A. Ofosu	MSc, (JKUAT), BSc (UMaT)	Lecturer	Control Engineering, Embedded Systems, Industrial Automation
Ms Ama B. Asiedu-Asante	MSc (Newcastle), BSc (UMaT)	Assistant Lecturer	Instrumentation, Automation and Control
Mr I. Aidoo	MSc (HiN), BSc (UMaT)	Assistant Lecturer and Departmental Training Officer	Power Generation and Stability

*On Study leave

DEPARTMENT OF MATHEMATICAL SCIENCES

INTRODUCTION

The Mathematical Sciences Department currently runs a four-year BSc degree programme. The programme is designed to provide students with a firm footing in Mathematical concepts and allied courses to harmoniously meet the requirements of educational institutions and industry. In addition to this, the Department runs MSc/MPhil and PhD programmes in Computational Mathematics, Financial Engineering and Statistics. The Department has qualified and seasoned lecturers. The Department's research interests are in the areas of optimisation, curve fitting, fluid dynamics and mathematical/statistical modelling among others. A successful graduate will thus find employment in a host of establishments including the banking and financial sectors, mining and related industries, educational and research institutions, just to mention a few.

ACTIVITIES OF ACADEMIC STAFF

DR ISSAKA YAKUBU

Research Activities/Interests

- Global Navigation Satellite System (GNSS).
- Cadastral and Engineering Surveys.
- Mine Surveys.
- Geo-Informatics for Disaster Risk Management.
- Land Policy and Administration.
- Spatial Planning.



Dr I. Yakubu
Head

Recent Publications

- **Yakubu, I.**, Mireku-Gyimah, D. and Duker, A. A. (2019), Spatial Multi-Criteria Modelling and Evaluation of Fire Risk - A Case Study in the West Gonja Area of Ghana, *LAP LAMBERT Academic Publishing*, Mauritius, 157 pp.
- Ziggah, Y. Y., **Yakubu, I.**, Laari, P. B. and Hui, Z. (2019), "2D Cadastral Coordinate Transformation using Extreme Learning Machine Technique", *Journal of Geodesy and Cartography*, Vol. 67, No. 2, 2018, pp. 321 - 343.
- **Yakubu, I.**, Mireku-Gyimah, D. and Asafo-Adjei, D. (2018), "Hybrid-Methods-for Optimisation of Weights in Spatial Multi-Criteria Evaluation Decision for Fire Risk and Hazard", *World Academy of Science, Engineering and Technology-International Journal of Geotechnical and Geological Engineering*, Vol. 12, No. 12, pp. 723 - 728.
- **Yakubu, I.**, Ziggah, Y. Y. and Peprah, M. S. (2018) "Adjustment of DGPS Data using Artificial Intelligence and Classical Least Square Techniques", *Indian Society of Geomatics-Journal of Geomatics*, Vol. 12, No. 1, pp. 13 - 20.
- **Yakubu, I.**, Ziggah, Y. Y. and Baafi, K. A. (2018), "Prediction of Tidal Effect on the Earth Crust for Geodetic Deformation Monitoring", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 63 - 69.
- **Yakubu, I.**, Ziggah, Y. Y. and Tenadu, K. (2018), "Education for Spatial Planning and Design: Integrating Surveying and Mapping Sciences as a Foundation- A Case Study", *Proceedings of FIG Congress 2018*, Istanbul, Turkey, pp. 1 - 11.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQUA in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.

Outreach Programmes/Extensions Services

- Instructor, Training of Survey Assistants.
- Resource Person, Seminar on Dynamics of GPS Surveys, organised by Achievers-Geo Survey, Takoradi, Ghana.
- Preparation of Mine Concessions Plans for Goldfields Ghana Limited, Tarkwa Mine.
- Preparation of Mine Concessions Plans for AngloGold Ashanti Iduaprim Mine.
- Mine Concession Dispute Survey at Pampe Mining Lease Site (GSRL).
- Reviewer, South Africa Journal of Geomatics, Ghana Journal of Technology and Ghana Mining Journal.

DR MRS CHRISTIANA CYNTHIA NYARKO**Research Activities/Interests**

- Epidemiology (Chlamydia Trachomatis Infection)
- Statistical Modelling (Biostatistics, Survival Analysis, Regression Modelling, Diagnostics Analysis and Gender Concepts).

Recent Publication

- Nyarko, P. K., Danso-Addo E., **Nyarko, C. C.**, Nabubie, I. and Larbi, S. A. (2018), "An Application Software for Binomial Option Pricing Models", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 1 - 11.

Conferences/Workshops/Seminars

- Participant, 1st International Statistics Conference on "Statistics: A Necessary Companion for Achieving the Sustainable Development Goals", Regent University College of Science and Technology, McCarthy Hill, Accra, 19th - 21st November, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

DR LEWIS BREW**Research Activities/Interests**

- Pure Mathematics (Abstract Algebra, Algebraic Topology and Dynamical Systems).
- Applied Mathematics (Differential Equations (Boundary Values and its Application)).
- Quantitative Techniques.
- Statistical Analysis and Time Series Analysis.
- Linear Algebra.
- Probability and Statistics.
- Calculus.

Recent Publications

- **Brew, L.**, Acquah, J., Nyarko, F. and Amidu, M. (2018), "Matrix Dynamics of Migration Trends of Rural-Urban Population in Ghana", *Science Journal of Applied Mathematics and Statistics*, Vol. 6, No. 2, pp. 58 - 64.
- Simons, A., **Brew, L.**, Buabeng, A. and Nador, H. (2018), "Analysis of Carbon Dioxide Emissions in Ghana", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 1 - 6.
- Acquah, J., Buabeng, A. and **Brew, L.** (2018), "Comparative Study of Mathematical Models for Population Growth in Ghana Prisons", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 25 - 30.

Conferences/Workshops/Seminars

- Participant, Conference of Africa Confederation of Cooperative Savings and Credit Associations (ACCOSCA), Accra, Ghana, 24th - 26th October, 2018.

Outreach Programmes/Extension Services

- Facilitator, Commonwealth Executive of Master of Business Administration (CEMBA), KNUST, Ghana.
- Senior Course Tutor, Centre for Continuing Education, Cape Coast, Ghana.
- Assistant Examiner, West Africa Senior Secondary School Certificate Examination, Ghana.

DR JOSEPH ACQUAH**Research Activities/Interests**

- Inverse Problems.
- Regularisation Techniques.
- Numerical Partial Differential Equations.

Recent Publications

- **Acquah, J.**, Benyah, F. and Kuma, J. S. Y. (2019), "Regularisation Technique for a Distributed Parameter Identification Problem", *Journal of Mathematics Research*, Vol. 11, No. 1, pp. 64 - 75.
- **Acquah, J.**, Buabeng, A. and Brew, L. (2018), "Comparative Study of Mathematical Models for Population Growth in Ghana Prisons", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 25 - 30.
- Asante-Annor, A., **Acquah, J.** and Ansah, E. (2018), "Hydrogeological and Hydrochemical Assessment of Basin Granitoids in Assin and Breaman Districts of Ghana", *Journal of Geoscience and Environment Protection*, Vol. 6, pp. 31 - 57.
- Brew, L., **Acquah, J.**, Nyarko, F. and Mohammed, A. (2018), "Matrix Dynamics of Migration Trends of Rural-Urban Population in Ghana", *Science Journal of Applied Mathematics and Statistics*, Vol. 6, No. 2, pp. 58 - 64.

Conferences/Workshops/Seminars

- Participant, Workshop on University Examinations Portal, organised by PQAU, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

DR PAUL BOYE**Research Activities/Interests**

- Development of Mathematical Models and Selection of the Best Model to Determine Housing Unit Price.
- Modelling to Show a Relationship between Housing Unit Price and Some Major Components in a Real Estate Building.

Recent Publications

- **Boye, P.**, Mireku-Gyimah, D. and Sadiq, H. (2019), "Time Series Analysis Model for Estimating the Price of a Housing Unit", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 35 - 41.
- **Boye, P.**, Mireku-Gyimah, D. and Luguterah, A. (2018), "Principal Components Regression Model for Estimating the Price of a Housing Unit", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 17 - 23.

DR ERIC NEEBO WIAH**Research Activities/Interests**

- Applying Discrete and Continuous Element Modelling to Transportation Reactions, Mineral Separation and Size Reduction.
- Numerical Weather and Climate Prediction.
- Regional Climate Modelling using Weather Research and Forecasting (WRF).

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Workshop for University Examinations Officers on the Processing of Examinations Questions, organised by PQAU, UMaT, Tarkwa, Ghana, 27th September, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Consultant, Ore Testing and Statistical Analysis for Chirano Gold Mines Ltd.

DR HENRY OTOO**Research Activities/Interests**

- Topological Dynamics.
- Mathematical Modelling.
- Dynamical Systems.

Recent Publication

- **Otoo, H.**, Buabeng, A. and Inkoom, J. (2019), "Application of Numerical Methods in Transient Analysis", *International Journal of Science and Research*, Vol. 8, No. 5, pp. 2108 - 2112.

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Workshop for University Examinations Officers on the Processing of Examinations Questions, organised by PQAU, UMaT, Tarkwa, Ghana, 27th September, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR PETER KWESI NYARKO

Research Activities/Interests

- Forest growth and Ecological Patterns.
- Patterns of Population Growth and Ecological Effects.
- Evaluate the Climate Sensitivity of Model-Based Forest Productivity Estimates.

Recent Publication

- Nyarko, P. K., Danso-Addo E., Nyarko, C. C., Nabubie, I. and Larbi, S. A. (2018), "An Application Software for Binomial Option Pricing Models", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 1 - 11.

Outreach Programmes/Extension Services

- Assistant Examiner, West African Examinations Council.

MR ERNEST DANSO-ADDO

Research Activities/Interests

- Epidemiological Modelling.
- Mathematical Biological Modelling.
- Differential Equations.
- Optimal Control.

Recent Publication

- Nyarko, P. K., Danso-Addo E., Nyarko, C. C., Nabubie, I. and Larbi, S. A. (2018), "An Application Software for Binomial Option Pricing Models", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 1 - 11.

MR BASHIRUDDIN NABUBIE IBRAHIM

Research Activities/Interests

- Financial Mathematics (Financial Derivatives Options).

Recent Publication

- Nyarko, P. K., Danso-Addo E., Nyarko, C. C., Nabubie, I. and Larbi, S. A. (2018), "An Application Software for Binomial Option Pricing Models", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 1 - 11.

MS MONICA VERONICA CRANKSON

Research Activities/Interests

- Financial Mathematics Special in Financial Derivatives Option.
- Convex Analysis and Optimisation.
- Mathematical Analysis.
- Functional Analysis.

MR BENJAMIN ODOI**Research Activities/Interests**

- Applied Statistics.
- Data Mining and Big Data Analytics.
- Risk Analysis.
- Model Selection and Improving Prediction Accuracy.
- Design and Analysis of Experiments.
- Epidemiological Experiments.

Recent Publications

- **Odoi, B.**, Samita, S., Al-Hassan, S. and Twumasi-Ankrah, S. (2019), "Efficiency of Bartlett and Levenes Tests for Testing Homogeneity of Variance under Varying Number of Replicates and Groups in One - Way", *International Journal of Mathematics, Statistics and Applied Sciences*, pp. 42 - 46.
- **Odoi, B.**, Twumasi-Ankrah, S., Al-Hassan, S. and Appiah, S. T. (2018), "Multivariate Analysis of Price Volatility in Petroleum Products using the DCC and BEKK-GARCH Models", *The International Journal of Science and Technology*, Vol. 6, No. 3, pp. 116 - 126.
- Appiah, S. T., Buabeng, A. and **Odoi, B.** (2018), "Comparative Study of Mathematical Models for Ghana's Gold Production", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 78 - 83.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Annual Congress: An International Forum for Postgraduate Researchers, Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, Sri- Lanka, 15th - 16th November, 2018.

MR KOFI AGYARKO**Research Activities/Interests**

- Modelling Insurance Claims/Premium.
- Modelling the Volatility of Financial Instruments.

Recent Publications

- **Agyarko, K.**, Appiah, T. S. and Simons, A. (2018), "Application of Generalised Estimating Equations to Non-Life Insurance Claims Reserve in Ghana-A Case Study", *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, Vol. 42, No. 1, pp. 72 - 80.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Workshop on University Examinations Portal, organised by PQUA, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, 1st International Statistics Conference on "Statistics: A Necessary Companion for Achieving the Sustainable Development Goals", Regent University College of Science and Technology, McCarthy Hill, Accra, 19th - 21st November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.

MR ALBERT BUABENG**Research Activities/Interests**

- Statistical Methods for Condition Monitoring and Quality Improvement.
- Multivariate Prediction and Process Control with Latent Variables.
- Time Series Analysis and Growth Modelling.
- Dimensionality Reduction.
- Artificial Neural Networks.
- Designed Experiments.

Recent Publications

- **Buabeng, A.**, Twumasi-Ankrah, S., Nyantakyi, K. A. and Kumi-Boateng, B. (2019), Parsimonious Model for Predicting Cocoa Production in Ghana, *Advances and Applications in Statistics*, Vol. 55, No. 2, pp. 193 - 220.
- Otoo, H., **Buabeng, A.** and Inkoom, J. (2019), "Application of Numerical Methods in Transient Analysis", *International*

Journal of Science and Research, Vol. 8, No. 5, pp. 2108 - 2112.

- Appiah, S. T., **Buabeng, A.** and Dumakor-Dupey, N. K. (2018), "Multivariate Analysis of the Effect of Climate Conditions on Gold Production in Ghana", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 72 - 77.
- Acquah, J., **Buabeng, A.** and Brew, L. (2018), "Comparative Study of Mathematical Models for Population Growth in Ghana Prisons", *Ghana Journal of Technology*, Vol. 3, No. 1, pp. 25 - 30.
- Appiah, S. T., **Buabeng, A.** and Odoi, B. (2018), "Comparative Study of Mathematical Models for Ghana's Gold Production", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 78 - 83.
- Simons, A., Brew, L., **Buabeng, A.** and Hope, N. (2018), "Analysis of Carbon Dioxide Emission in Ghana", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 1 - 6.
- Simons, A., Quartey G. and **Buabeng, A.** (2018), "Technical and Vocational Education Training (TVET) in Ghana's Industrial Development", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. ECM 23 - 28.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Orientation for Newly Appointed Staff (Teaching and Non-Teaching), organised by PQAU, UMaT, Tarkwa, Ghana, 24th - 25th January, 2019.
- Participant, 1st International Statistics Conference on "Statistics: A Necessary Companion for Achieving the Sustainable Development Goals", Regent University College of Science and Technology, McCarthy Hill, Accra, 19th - 21st November, 2018.

MS MASH AHOBIA BUAH

Research Activities/Interests

- Financial Econometrics.
- Derivatives and Alternative Investments.
- Pricing of Bonds.
- Quality Control and Assurance.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Orientation for Newly Appointed Staff (Teaching and Non-Teaching), organised by PQAU, UMaT, Tarkwa, Ghana, 24th - 25th January, 2019.

Outreach Programmes/Extension Services

- Field Officer, Ghana Census for Agriculture

MR DAVID DELALI ZIGLI

Research Activities/Interests

- Homotopy of Fundamental Groups.
- Topology.
- Functional Analysis.
- Abstract Algebra.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Orientation for Newly Appointed Staff (Teaching and Non-Teaching), organised by PQAU, UMaT, Tarkwa, Ghana, 24th - 25th January, 2019.

ACADEMIC STAFF

Details of the academic staff of the Mathematical Sciences Department are given in Table 18.

Table 18 Academic Staff of the Mathematical Sciences Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr I. Yakubu	PhD, MPhil (UMaT), MSc (UCC), BSc (KNUST), Cert (UT)	Senior Lecturer and Head of Department	Global Navigation Satellite System (GNSS), Cadastral and Engineering Surveys, Mine Surveys, Geo-Informatics for Disaster Risk Management, Land Policy and Administration and Spatial Planning
Dr (Mrs) Christiana C. Nyarko	PhD (UMaT), MPhil (Ghana), BSc, NCE, (ONDO)	Senior Lecturer	Mathematical Modelling, Non-Parametric Statistics, Probability Theory Regression Analysis, Linear Algebra Calculus
Dr L. Brew	PhD (UMaT), MSc (KNUST), B.Ed (UEW)	Senior Lecturer	Ordinary Differential Equations, Partial Differential Equations, Integral Equations, Algebra, Calculus with Analytical Geometry
Dr N. Wiah	PhD (UMaT), MPhil, BSc (KNUST)	Lecturer	Advanced Numerical Analysis, Optimal Control Theory, Differential Equation, Optimisation
Dr J. Acquah	PhD (UMaT), MPhil, BSc (Cape Coast)	Lecturer	Inverse Problems, Regularisation Methods, Series Expansions, Differential Geometry, Real Analysis, Complex Analysis, Differential Equations, Linear Algebra, Modern Algebra, Calculus (Differentiation and Integration) Introductory Functional Analysis, Numerical Analysis.
Dr P. Boye	PhD (UMaT), MSc, BSc (KNUST)	Lecturer	Computer Solutions to Scientific Problems, Advanced Numerical Method, Operations Research, Optimisation Techniques, Control Theory, Applied Stochastic Processes, Mathematical Analysis, Calculus and Statistics.
Dr H. Otoo	PhD (UMaT), MPhil, BSc (KNUST)	Lecturer	Numerical Analysis, Pure Mathematics, Differential Equations, Optimisation.
Mr P. K. Nyarko	MSc (KNUST), BSc (Cape Coast)	Lecturer	Differential Equation, Numerical Methods, Optimization Techniques, Computer Application to Numerical Methods.
Mr. E. Danso-Addo	MPhil, BSc (Cape Coast)	Lecturer	Ordinary Differential Equations, Discrete Mathematics, Partial Differential Equation, Methods in Operational Research, Optimisation Techniques
Mr I. B. Nabubie*	MSc (Malardalens), BSc (KNUST)	Lecturer	Calculus, Statistics, Solid Geometry, Computational Financial, and Modelling of Financial Assets.
Ms Monica V. Crankson *	MSc (AUST), BSc (UMaT)	Lecturer	Functional Analysis, Convex Analysis and Optimisation, Mathematical and Biogeochemical Modelling.
Mr B. Odoi	MPhil, BSc (UMaT)	Lecturer	Probability and Statistical, Statistical Inference, Statistical Modelling, Stochastic processes and Application, Regression Analysis, Operations Research, Quality Control and Management, Calculus
Mr K. Agyarko	MPhil (KNUST), BSc (UMaT)	Assistant Lecturer	Insurance Claims Reserve, Financial Risk Management, Portfolio Theory, Probability Theory
Mr A. Buabeng	MPhil, BSc (UMaT)	Assistant Lecturer	Statistical Methods, Dimensionality Reduction, Time Series Analysis, Artificial Neural Networks, Designed Experiments, Multivariate Prediction and Process Control with Latent Variables
Ms M. A. Buah	MSc, BSc (UMaT)	Assistant Lecturer	Financial Econometrics, Derivatives and Alternative Investments, Pricing of Bonds, Quality Control and Assurance, Calculus
Mr D. D. Zigli	MPhil, BSc (KNUST)	Assistant Lecturer	Homotopy of Fundamental Groups, Topology, Functional Analysis, Abstract Algebra

* On study leave

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

INTRODUCTION

The Department of Computer Science and Engineering is an enviable department spearheading the development of information technology in UMaT, Ghana and Africa. This year, the seventh batch of students would be completing their BSc programme of study. Efforts are underway for the introduction of the Postgraduate programme at the Department. The Department seeks to provide higher education in Information Technology through effective teaching and learning, to promote knowledge through active research and dissemination of information, and to offer professional services through extension activities to agencies, industries and other institutions. The Department has well-trained teaching staff and well-equipped laboratory for effective teaching and learning.

ACTIVITIES OF ACADEMIC STAFF

DR MRS CYNTHIA BOKAI BOYE

Research/Activities Interests

- Shoreline Feature Mapping, Modelling and Prediction.
- Coastal Vulnerability Assessment for the Coast of Ghana.
- GIS Applications and Geo-Information Management.
- Cadastral and Engineering Surveys and Designing.



Dr Mrs C. B. Boye
Head

Recent Publications

- **Boye, C. B.** and Abubakar, T. (2019), "Application of Geographic Information System in Emergency Service Delivery - A Case of Ghana National Fire Service", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 65 - 72.
- **Boye, C. B.**, Appeaning Addo, K., Wiafe, G. and Dzigbodi-Adjimah, K. (2018), "Spatio-Temporal Analyses of Shoreline Change in the Western Region of Ghana", *Journal of Coastal Conservation*, Vol. 22, No. 4, pp. 769 - 776.
- **Boye, C. B.**, Peprah, M. S. and Kodie, N. K. (2018), "Geographic Assessment of Telecommunication Signals in a Mining Community: A Case Study of Tarkwa and its Environs", *Ghana Journal of Technology*, Vol. 2, No. 2, pp. 41 - 49.
- Peprah, M. S., **Boye, C. B.**, Larbi, E. K. and Opoku Appau, P. (2018), "Suitability Analysis for Siting Oil and Gas Filling Stations using Multi-Criteria Decision Analysis and GIS Approach - A Case Study in Tarkwa and its Environs", *Journal of Geomatics*, Vol. 12, No. 8, pp. 158 - 166.
- Vunase, G., **Boye, C. B.** and Ziggah, Y. Y. (2018), "Predicting Sea Level Anomaly along the Coast of Ghana using Artificial Neural Network Approach", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 234 - 238.
- Larbi, E. K., **Boye, C. B.** and Peprah, M. S. (2018), "A GIS Approach in Optimal Route Selection in the Mining Communities using the Analytical Hierarchy Process and the Least Cost Path Analysis", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. GLM 49 - 62.
- Amuah, V. I. and **Boye, C. B.** (2018), "Performance Evaluation for Mean Sea Level Prediction using Multivariate Adaptive Regression Splines and Artificial Neural Network", *Ghana Mining Journal*, Vol. 18, No. 1, pp. 1 - 8.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Presenter, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.
- Participant, Workshop on Research Communication and Commercialisation, organised by Association of African Universities, Accra, 15th - 17th May, 2018.

Outreach Programmes/Extension Services

- Reviewer, Journal of Disaster Risk Studies.
- Licensed Surveyor.
- Coordinator, Ghana Institution of Surveyors (GhIS) Refresher Course, Tarkwa Centre.

PROF BONIFACE KAYODE ALESE

Research Activities/Interests

- Cyber and Information Security.
- Digital Signal Processing.
- Quantum Computing.

Recent Publications

- Fagbolu O. O., **Alese, B. K.**, Adewale, O. S. and Adetunmbi, A. O. (2018), "Android Platform for Machine Translation -A Focus on Yorùbá Language", *American Journal of Computation, Communication and Control*, Vol. 5, No. 1, pp. 16 - 23.
- Araoye O. I., Adewale, O. S., **Alese B. K.** and Akinyede, O. R. (2018), "Developing a Secured Mobile-Agent-Based Electronic Commerce using Crypto-Steganography", *International Journal of Sciences*, Vol. 7, No. 2, pp. 83 - 88.
- **Alese B. K.**, Thompson, A. F., Alowolodu, O. D. and Oladele, B. E. (2018), "Multilevel Authentication System for Stemming Crime in Online Banking", *Interdisciplinary Journal of Information, Knowledge, and Management*, Vol. 13, pp. 79 - 94.
- Tom J. J., **Alese B. K.**, Adewale, O. S. and Thompson, A. F. (2018), "Efficient Anonymous Key Exchange Protocol for Roaming in Wireless, Networks", *International Journal of Scientific Research Engineering and Technology (IJSRET)*, Vol. 7, No. 2, pp. 66 - 73.
- Tom, J. J., **Alese, B. K.**, Thompson, A. F. and Anebod, N. P. (2018), "Performance and Security of Group Signature in Wireless Networks", *International Journal of Computer*, Vol. 29, No. 1, pp. 82 - 98.
- Owolafe, O., **Alese, B. K.** and Adewale, O. S. (2018), "Towards Detecting Deception using K-Nearest Neighbour Model", *International Journal of Computer Applications*, Vol. 18, No. 20, pp. 14 - 18.
- Mogaji, S. A., **Alese, B. K.** and Adetunmbi, A. O. (2018), "Validation of Hybridised Particle Swarm Optimisation (PSO) Algorithm with the Pheromone Mechanism of Ant Colony Optimisation (ACO) using Standard Benchmark Function", *Communications on Applied Electronics*, Vol. 7, No. 23, pp.13 - 20.
- **Alese, B. K.** and Adebayo, O. T. (2018) "Privacy-Preservation Framework for Sharing Genomic Data: A Game Theoretic Approach", *J. Health Med. Informat.*, Vol. 9, No. 5, pp. 1 - 5.
- Mogaji, S. A., **Alese, B. K.**, Thompson, A. F. and Ayeni, O. A. (2018), "Comparative Analysis of Trustworthiness in Swarm Intelligence Techniques using Mobile Adhoc Network Environment", *International Journal of Computer Science and Mobile Computing*, Vol. 7, No. 12, pp. 313 - 327.
- Mogaji, S. A., **Alese, B. K.**, Adetunmbi, A. O. and Olabode, O. (2018), "Development of Trust Metrics using Swarm Intelligence Techniques for Mobile Adhoc Networks", *International Journal of Scientific and Engineering Research*, Vol. 9, No. 12, pp. 1324 - 1334.
- Olasehinde, O. O., **Alese, B. K.** and Adetunmbi, A. O. (2018), "Performance Evaluation of Bayesian Classifier on Filter-Based Feature Selection Techniques", *International Journal of Computer Science and Telecommunications*, Vol. 9, No. 7, pp. 24 - 30.
- Mebawondu, J. O., Adewale, O. S., Dahunsi, F. M. and Alese, B. K. (2018), "Development of Predictive Model of Audio Quality of Service in Nigeria", *International Journal of Computer Science and Information Security (IJCSIS)*, Vol. 16, No. 7, pp. 14 - 20.
- Olasehinde, O. O., **Alese, B. K.** and Adetunmbi, A. O. (2018), "A Machine Learning Approach for Information Security", *International Journal of Computer Science and Information Security (IJCSIS)*, Vol. 16, No. 12, pp. 91 - 101.
- Thompson, A. F., Badejoko, M. Y. and **Alese, B. K.** (2018), "Image Matching via Scenery Analysis", *Proceedings of the 2nd International Conference on Applied Information Technology*, Federal University of Agriculture, Abeokuta, Nigeria, pp. 86 - 93.

DR VINCENT MWINTIERU NOFONG

Research Activities/Interests

- Data Mining.
- Pattern Mining.
- Trend Prediction.
- Classification.
- Bioinformatics.

DR ABDEL-FATAO HAMIDU

Research Activities/Interests

- Data Mining.
- GPS and Wireless Sensor Network.
- Human Mobility Prediction.
- Location Based Social Networks.
- Recommendation Systems.
- Bioinformatics.
- Artificial Intelligence.

MR ALBERT KWANSA ANSAH

Research Activities/Interests

- RFID Systems.
- Computer Systems and Networks.
- Wireless Networks and Security Risk.
- Mobile Computing and Communication.
- User Interface Design.

MRS MILLICENT AKOTAM AGANGIBA

Research Activities/Interests

- Electronic/Digital Government.
- Web Accessibility/Inclusive Design.
- Assistive Technologies.
- Information and Communication Technologies for Development (ICT4D).

Recent Publications

- **Agangiba, M.** and Agangiba, W. A. (2019), "Evaluation of Accessibility for the Visually Impaired: The Case of Higher Education Institutions' Websites in Ghana", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 58 - 64.
- **Agangiba, M.** and Agangiba, W. A. (2019), "Assessing the Impact of Socio-Economic HIV Driving Factors in Ghana: Rural Versus Urban", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 42 - 50.
- **Agangiba, M.**, Kabanda, S. and Brown, I. (2018), "Experiences of Persons with Disabilities in Accessing E-Government Services in Ghana", *Proceedings of 26th European Conference on Information Systems*, Portsmouth, United Kingdom, pp. 1 - 16.
- **Agangiba, M.** and Kabanda, S. (2018), "Accessibility of E-government Services for Persons with Disabilities in Ghana-Web developers' perspective", *Proceedings of the 2nd International Women in Science Without Borders Conference*, Johannesburg, South Africa, pp. 1 - 3.

Conferences/Workshops/Seminars

- Participant, Workshop on Internet of Things and Other Webs of Entrapment, organised by the School of IT, University of Cape Town, Cape Town, South Africa, 29th May, 2018.
- Participant, Workshop on Is ICT4D Really Making a Difference?, organised by the School of IT, University of Cape Town, Cape Town, South Africa, 23rd May, 2018.
- Participant, Workshop on Digitisation, organised by the School of IT, University of Cape Town, Cape Town, South Africa, 14th May, 2018.

Outreach Programmes/Extension Services

- Reviewer, American Journal of Computer Science and Technology, African Journal on Information Systems, International Journal of Wireless and Mobile Computing, International Development Informatics Association Conference.
- South African Computer Lecturers Association Conference.
- Member, Institute of Electrical and Electronics Engineering (IEEE), Association of Computing Machines (ACM).

MR THOMAS KWANTWI

Research Activities/Interests

- Cryptography.
- Computer Security.
- Computer Communication.
- Wireless Personal Communication Systems and Networks.
- Design and Architecture of Computer Systems.
- Database Systems.

MR WILLIAM AKOTAM AGANGIBA

Research Activities/Interests

- Data Structures, Algorithms and High-Level Programming.
- Expert Systems.
- Logics (Fuzzy Logic, Propositional Logic, First Order Logic and Description Logic).
- Data Analytics.
- Data Base Systems.
- Information Technology Project Management.

Recent Publications

- Agangiba, M. and **Agangiba, W. A.** (2019), "Evaluation of Accessibility for the Visually Impaired: The Case of Higher Education Institutions' Websites in Ghana", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 58 - 64.
- Agangiba, M. and **Agangiba, W. A.** (2019), "Assessing the Impact of Socio-Economic HIV Driving Factors in Ghana: Rural Versus Urban", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 42 - 50.
- Deho, O. B. and **Agangiba, W. A.** (2019), "Sentiment Analysis with Word Embedding: The Case of Double-Track Education System in Ghana", *Ghana Journal of Technology*, Vol. 3, No. 2, pp. 51 – 57.
- Odjidja, E., Kabanda, S., **Agangiba, W.** and Annan, R. (2018), "Wireless VoIP Implementation using Asterisk Pbx and Open Source Softphone", *Proceedings of EAI International Conference on Technology, R&D, Education and Economy for Africa*, Abidjan, pp. 1 - 9.

Outreach Programmes/Extension Services

- Certificate, IBM Cloud Application Developer 2018 Mastery Award for Educators.

MR STEPHEN ANOKYE**Research Activities/Interests**

- Security in Wireless Sensor Networks.
- Logic of Computer Science.
- Artificial Intelligence.
- Data Science.

MR EMMANUEL EFFAH**Research Activities/Interests**

- Smart Systems Design.
- Data Mining.
- Digital Signals and Image Processing.

MR FELIX LARBI ARYEH**Research Activities/Interests**

- Wireless Network Security.
- Cyber Security.
- Internet/Web Technologies.
- Database Systems.

SYLVESTER AKPAH**Research Activities/Interests**

- Secured Cloud Based Healthcare Systems.
- Open Source Firewall Configuration.
- Computer Network Infrastructure Design and Management.
- Network Securities.

Recent Publications

- Mensah, B., Hayfron, A. J. B. and **Akpah, S.** (2019), "Tool for Detecting Irregular Patterns in the Use of Automated Teller Machine Card using K-Means Algorithm", *International Journal of Scientific and Engineering Research*, Vol. 10, No. 1, pp. 1038 - 1046.

Outreach Programmes/Extension Services

- Member, 5th UMaT Career and Innovation Fair, UMaT, Tarkwa, Ghana.
- Sub-Committee Member, 5th UMaT Biennial and International Conference Finance Committee.
- Resource Person, Orientation Programme for Fresh Students, UMaT, Tarkwa, Ghana, October, 2018.

MR RICHARD KOFI ANNAN**Research Activities/Interests**

- Fixed and Mobile Telephony (Analog, Digital, VoIP).
- IP Network Systems and Security.
- Synchronous Telemedicine Network Modelling.
- Network Simulation and Modelling and Bandwidth Optimisation.

- Wireless Communications.
- Project Management.

Recent Publications

- **Annan, R. K.** and Agyepong, J. T. (2018), "Pragmatic Teleconsultation Network Model to Address the Bandwidth Deficiency Inhibiting Real-Time Telemedicine Implementation in the Sub-Saharan Africa", *International Journal of Innovative Research and Development*, Vol. 7, No. 7, pp. 203 - 209.
- Odjidja, E., Kabanda, S., Agangiba, W. and **Annan, R.** (2018), "Wireless VoIP Implementation using Asterisk Pbx and Open Source Softphone", *Proceedings of EAI International Conference on Technology, R&D, Education and Economy for Africa*, Abidjan, pp. 1 - 9.
- **Annan, R. K.**, Amoako, R. O. and Agyepong, J. T. (2018), "Comparative Analysis of the Re-Convergence Ability of RIP, OSPF and EIGRP Routing Protocols", *International Journal of Innovative Research and Development*, Vol. 7, No. 7, pp. 197 - 202.

ACADEMIC STAFF

Details of the academic staff of the Computer Science and Engineering Department are given in Table 19.

Table 19 Academic Staff of the Computer Science and Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr Mrs Cynthia B. Boye	PhD (Ghana), PM (ITC), BSc (KNUST), MGHIE, MGhIS	Senior Lecturer/ Head of Department	Shoreline Change Modelling and Prediction Coastal Vulnerability Assessment for Ghana, GIS and Geo-Information Management, Cadastral, and Engineering Surveys
Prof B. K. Alese**	PhD, M. Tech, B. Tech (FUTA), MNCS, MIEEE, MACM, CPN	Professor	Cyber and Information Security, Digital Signal Processing, Quantum Computing
Dr V. M. Nofong	PhD (UniSA), BSc (UMaT)	Lecturer/Exams Officer	Data Mining, Pattern Mining, Trend Prediction, Classification, Bioinformatics
Dr H. Abdel-Fatao	PhD (UniSA), BSc (UMaT)	Lecturer	Data Mining, GPS and Wireless Sensor Network, Human Mobility Prediction, Location Based Social Networks, Recommendation Systems, Bioinformatics, Artificial Intelligence
Mr A. K Ansah*	MSc (Grewenwich), PgD (Westminster)	Lecturer	Mobile and Wireless Computing, Network Design and Implementation, Network Coding, Network Security, Power Line Communication
Mr T. Kwantwi	MSc (TSTU)	Lecturer	Computer Systems, Networks, Database
Mr W. A. Agangiba	MSc, BSc (TSTU)	Lecturer	Data Base Systems, Data Analytics, IT Project Management, Data Structures, Algorithms and High Level Programming
Mrs M. A. Agangiba*	MSc (TSTU)	Lecturer	Electronic/ Digital Government, Web Accessibility/ Inclusive Design, Assistive technologies Information and Communication Technologies for Development (ICT4D)
Mr S. Anokye*	MEng (Hunan), BSc (KNUST)	Lecturer	Security in Wireless Sensor Network, Logic of Computer Science, Artificial Intelligence, Data Science
Mr E. Effah*	MIT (AIT/OUM), BSc (UMaT)	Lecturer	Smart Systems Design, Data mining, Digital Signals and Image Processing
Mr F. L. Aryeh	MSc (KNUST), BSc (Ghana)	Research Fellow	Wireless Network Security, Internet/Web Technologies and Cyber Security
Mr S. Akpah	MSc (KNUST), BSc (GTUC)	Lecturer	Open Source Firewall Configuration, Computer Network Infrastructure Design and Management, Network Securities
Mr R. K. Annan	MSc (SU), BSc (UMaT)	Assistant Lecturer	Digital Telephony (VoIP), Wireless Communications, Telemedicine Technology, Network Systems and Security, Project Management, Data Base Systems and Network and Bandwidth Optimisation.

** Visiting Scholar *On Study leave

DEPARTMENT OF RENEWABLE ENERGY ENGINEERING

INTRODUCTION

The Renewable Energy Engineering Department is a new addition to the programmes offered by the Faculty of Engineering. The Department currently holds over a hundred students. The programme seeks to teach the requisite skills needed to design, build and optimise renewable energy infrastructure to diversify from the current use of hydrocarbons and reduction of CO₂ emissions. The course structure covers solar, biomass, hydro, wind and other renewable energy sources. Other courses include legislation, planning and economic considerations associated with renewable energy and its integration to the national grid. The programme has been designed to be as practical as possible through laboratory sessions, field trips, internships and also provide students with the opportunity to develop skills in solving critical engineering problems in the renewable energy industry through individual and team-based project work. The new laboratory hosts the current technologies associated with solar, hydrogen and wind energy sources poised to make the students be at par in the renewable energy sector. Staff and researchers are poised to make a mark in ensuring renewable energy is well positioned in Ghana and beyond.

ACTIVITIES OF ACADEMIC STAFF

DR EDWARD ERIC DUNCAN

Research Activities/Interests

- Network Analysis and Renewable Energy.
- 3D Surface and Subsurface GIS Modelling.
- 2D GIS Modelling and Applications.
- Global Positioning Systems for Network Positioning Analysis.

Outreach Programmes/Extension Services

- Member, ISPRS WG IV/1 Multi-dimensional Modelling.
- Doctoral Degrees Board Member, University of Cape Town, South Africa.



Dr Edward E. Duncan
Head

ASSOC PROF CHRISTIAN KINGSLEY AMUZUVI

Research Activities/Interests

- Renewable Energy Systems.
- Communication Systems.
- Telecommunication Laser Diodes.

Conferences/Workshops/Seminars

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR KINGSLEY BEDIAKO OWUSU

Research Activities/Interests

- Renewable and Non-renewable Energy Technologies.
- Efficient Energy Production, Transmission, Utilisation and Billing.

Conferences/Workshops/Seminars

- Participant, Workshop on University Examinations Portal, organised by PQAU, UMaT, Tarkwa, Ghana, 14th December, 2018.

MR ISAAC OSEI

Research Activities/Interests

- Renewable Energy (Bioengineering).
- Biomass Gasification, Biogas Technology.
- Solar PV and Thermal Systems.
- Jatrophy Production and Utilisation.

Recent Publications

- Commeh, M. K., Kemausuor, F., Badger, E. N. and Osei, I. (2019), "Experimental study of Ferrocement Downdraft Gasifier Engine System using Different Biomass Feedstocks in Ghana", *Sustainable Energy Technologies and Assessments*, Vol. 31, pp. 124 - 131.
- Kemausuor, F., Sedzro, M. D. and Osei, I. (2018), "Decentralised Energy Systems in Africa: Coordination and Integration of Off-Grid and Grid Power Systems-Review of Planning Tools to Identify Renewable Energy Deployment Options for Rural Electrification in Africa", *Current Sustainable/Renewable Energy Reports*, Vol. 5, No. 4, pp. 214 - 223.

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Workshop on Training Course 2 for Experts and Professionals on Solar Thermal Energy, organised by ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREE) in Coordination with AEE - Institute for Sustainable Technologies and Koforidua Technical University (KTU) 1st - 3rd August, 2018.

MR DOMINIC YELLEZUOME

Research Activities/Interests

- Renewable Energy (Bioenergy).
- Wind Energy Resources and Wind Turbine.

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation - organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

ACADEMIC STAFF

Details of academic staff of the Department of Renewable Energy Engineering are given in Table 20.

Table 20 Academic Staff of the Renewable Energy Engineering Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr E. E. Duncan	PhD (Skudai), MSc (Glasgow), BSc (KNUST), MGHIS	Senior Lecturer, Head of Department	Geographic Information Systems
Assoc Prof C. K. Amuzuvi	PhD (Nottingham), MSc (Kharkov)	Associate Professor	Communication Systems, Telecommunication Laser Diodes, Renewable Energy Systems
Mr Kingsley B. Owusu	MSc (Glamorgan), BSc (UMaT)	Lecturer, Departmental Examinations Officer	Efficient Renewable Energy, Non-Renewable Energy Production
Mr Isaac Osei	MPhil (KNUST), BSc (UMaT)	Lecturer	Renewable Energy: Bioenergy, Biomass Gasification, Biogas Technology, Solar PV and Thermal Systems, Jatrophy Production and Utilisation
Mr Dominic Yellezuome	MSc (Durham), BSc (KNUST)	Assistant Lecturer	Renewable Energy (Bioenergy), Wind Energy Resources and Wind Turbine

The Administrative/Technical Staff of the Faculty are presented in Table 21.

Table 21 Administrative/Technical staff of the Faculty

Name	Qualification	Designation	Department
Mr Daniel O. Sackey	MBA, BA (Cape Coast)	Senior Administrative Assistant	Mechanical Engineering
Ms Janet Angoh	BA (UDS)	Senior Administrative Assistant	Electrical and Electronic Engineering
Mr Dominic Achari	MBA, BA (Cape Coast)	Senior Administrative Assistant	Renewable Energy Engineering
Ms Kate D. Arpoh	BBA (UEW), HND (T'di Poly)	Senior Administrative Assistant	Computer Science and Engineering
Mr Reuben Y. Anuro	BSc (KNUST), HND (S Poly)	Senior Technician	Electrical and Electronic Engineering
Mr Kwabena Yankyera	BSc (KNUST), HND (A Poly)	Principal Technician	Electrical and Electronic Engineering
Mr Seyram A. Kordzi	HND (Ho Poly)	Senior Technician	Electrical and Electronic Engineering
Mr Willinson R. Annan	BSc (KNUST)	Senior Technician	Mechanical Engineering
Mr James Kakraba	MET Part III	Senior Technician	Mechanical Engineering
Mr Prosper H. Sossah	MET Part III	Technician	Mechanical Engineering
Mr Kojo Gaise	Diploma (T'di Poly)	Technician	Computer Science and Engineering
Mr John Kojo Aggrey	Advanced Certificate in Welding and Fabrication (GES)	Assistant Technician	Mechanical Engineering

FACULTY OF INTEGRATED MANAGEMENT SCIENCE

INTRODUCTION

The Faculty of Integrated Management Science is a new addition to the Faculties in the University. Although it had been on the drawing board for some time now, it came into operation at the beginning of the 2017/2018 Academic Year. The Faculty consists of two academic departments, namely: Department of Technical Communication and the Department of Management Studies. The Department of Technical Communication runs a one-year Certificate in English programme which targets Francophone students who want to learn English to enable them enrol into the engineering programmes. The Department of Management Studies runs two master's programmes and one certificate programme. The programmes are Master of Business and Technology Management (with specialisation in Finance and Investments/Supply Chain Management/Management Information Systems), MSc Engineering Management and a one-year certificate programme in Small-Scale Mine and Quarry Administration.

STAFF OF THE FACULTY

The following are staff of the Dean's office:

Prof Richard K. Amankwah	- Dean
Assoc Prof Mrs Patricia B. Mireku-Gyimah	- Vice Dean
Margaret Mary Sackey (Ms)	- Faculty Officer



Prof Richard K. Amankwah
Dean

UNDERGRADUATE STUDENTS ENROLMENT

There are nine (9) undergraduate students in the Faculty. The breakdown is shown in Table 22.

Table 22 Undergraduate Students Enrolment

Programme	Year One
Certificate in English	3
Certificate in Small Scale Mine and Quarry Administration	6
Total	9

POSTGRADUATE STUDENTS ENROLMENT

There are twenty-five (25) postgraduate students in the Faculty. The breakdown is shown in Table 23.

Table 23 Postgraduate Students Enrolment

Programme	Year One
Master of Business and Technology Management	17
MSc Engineering Management	8
Total	25

DEPARTMENT OF TECHNICAL COMMUNICATION

INTRODUCTION

The Department of Technical Communication (DTC) was born out of the erstwhile Centre for Communication and Entrepreneurship Skills (CENCES), which was established in 2011 to become the nucleus of the third faculty of the University and has now matured into the Faculty of Integrated Management Science (FIMS). Before CENCES, the Department had evolved over the years from the English Section of the Department of Mining Engineering to the Languages (English and French) Section of the same Mother Department. With its new status, the DTC is now one of the two academic departments under FIMS. The Department, like its predecessor CENCES, currently operates as a servicing department but has far-advanced plans to start its own degree programme, namely the Bachelor of Science in Technical Communication. The Department also runs the One-Year Certificate programme in English for non-English speaking international applicants, which started in the 2012/2013 Academic Year. The DTC has plans to run a Certificate programme in French Proficiency and also upgrade the existing Basic French Courses to fit the A1 Certificate of the Alliance Française to help make our students more competitive. Additionally, the Department plans to run other short courses in English and French to benefit the local community. Apart from teaching, staff were actively engaged in research, consultancy and extension services during the year under review. The Head of Department, Assoc Prof Mrs Patricia Beatrice Mireku-Gyimah, donated a brand new Canon Photocopier (imageRUNNER 2530i) to the Department.

ACTIVITIES OF ACADEMIC STAFF

ASSOC PROF MRS PATRICIA BEATRICE MIREKU-GYIMAH

Research Activities/Interests

- Issues in Language Teaching.
- Language and Communication.
- Language and Society.
- Language and Literature.
- Pidgin English on University Campus.



Assoc Prof Mrs P. B.
Mireku-Gyimah
Head

Recent Publication

- **Mireku-Gyimah P. B.** (2018), "I dey trust you waa": Pidgin English as a Current Spoken Communication Tool at University of Mines and Technology", *Ghana Mining Journal*, Vol. 18, No. 2, pp. 77 - 86.

Conferences/Workshops/Seminars

- Participant, Conference in Honour of Prof Atta Gyamfi Britwum on "Literature and the Humanities in the 21st Century: Interdisciplinary Perspectives", Department of French, University of Cape Coast, 13th - 15th March, 2019.
- Participant, 9th S. H. Amisshah Lecture on "Promoting our Civic Responsibility towards Sustainable Environment: The Role of the Church and the State", Gaddiel Acquah Methodist Cathedral, Tarkwa, 9th March, 2019.
- Participant, Workshop on University Examinations Portal, organised by PQAU, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.
- Participant/Moderator, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.
- Presenter, 11th Conference of the Linguistics Association of Ghana (LAG), University of Ghana, Legon, 30th July - 1st August, 2018.

Outreach Programmes/Extension Services

- Chairman, Local Organising Committee, LAG 2019@UMaT.
- Sectional Editor, Ghana Mining Journal.
- Reviewer, Central Inquiry, Online International Journal of Arts and Humanities (OIJAH), Asian Journal of Language, Literature and Cultural Studies (AJL2C), International Journal of Academic Research in Education and Review (IJARER), Journal of Education, Society and Behavioural Science (JESBS).

DR MRS CECILIA ADDEI

Research Activities/Interests

- African Literature.
- The *Bildungsroman* and its Variants in African Literature.
- War Narratives.
- Gender in African Literature.
- Communication Skills.

Recent Publications

- **Addei, C.** (2018), ""Walahé!": "You should have seen it": Validating the Truth of Wartime Absurdities in Ahmadou Korrouma's Allah is not Obligated", *Gragoatá*, Vol. 23, No. 45, pp. 24 - 44.
- **Addei, C.** (2018), ""Rape or Die": War as Initiation Rite in Chris Abani's " Song for Night""", *Journal of Humanities and Social Science*, Vol. 23, No. 7, pp. 20 - 26.
- Osei, C. E. and **Addei, C.** (2018), "An Analysis of the Aboakyer Festival as Drama", *Journal of English Language and Literature*, Vol. 10, No. 1, pp. 989 - 994.

Conferences/Workshops/Seminars

- Presenter, African Popular Culture Conference, Ashesi University, Accra, Ghana, 22nd August, 2018.
- Presenter, African Studies Association Conference, Atlanta, USA, 29th November - 1st December, 2018.

DR EVANS KOKROKO

Research Activities/Interests

- Conception of Modules for Trainer of Trainers, French as a Foreign Language.
- Use of Multimedia Equipment in Language Teaching.
- Integration of Multimedia Equipment in the Teaching of French as a Foreign Language.

Conferences/Workshops/Seminars

- Participant, Soixante ans de la GAFT: Défis, Accra, Ghana, 31st August, 2018.

Outreach Programmes/Extension Services

- French for Specific Purposes, Alliance Française, Accra.
- Counsellor, Ghana Association of French Teachers.
- Examiner, West African Examination Council.
- Adviser, Consultant, BECE French, Ghana.
- Resource Person, Teaching of French Language, VRA Schools, Akosombo, Ghana, Alliance Française Ghana (Integration of ICT into Teaching of French).

MR ERASMUS ARHINFUL

Research Activities/Interests

- Error Analysis.
- Discourse Analysis.
- Applied Linguistics

Conferences/Workshops/Seminars

- Participant, Workshop on the Rudiments of Academic Publishing, organised by the Linguistics Association of Ghana (LAG), African University College Communication (AUCC), Accra, Ghana, 18th January, 2019.

Outreach Programmes/Extension Services

- Lecturer, English Syntax, Methodology, Literature, Phonetics and Phonology, Semantics, and Communication Skills, Takoradi Study Centre of the Centre for Continuing Education, University of Cape Coast, Ghana.
- Lecturer, Communication Skills, Midwifery School, Tarkwa, Ghana.

MRS ELIZABETH KONADU MILLS ABBEY

Research Activities/Interests

- Literature in English.
- African Oral Literature.
- Communication Skills.
- African Oral Literature.

Conferences/Workshops/Seminars

- Participant, Workshop on the Rudiments of Academic Publishing, organised by the Linguistics Association of Ghana (LAG), African University College Communication (AUCC), Accra, Ghana, 18th January, 2019.
- Participant, Workshop on University Examinations Portal, organised by PQAU, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.

Outreach Programmes/Extension Services

- Assistant Examiner, West African Examinations Council (WAEC).

MR PHILIP BOATENG ANSAH**Research Activities/Interests**

- Onomastics.
- Communication Skills.
- Sociolinguistics.
- Oral Literature.

Conferences/Workshops/Seminars

- Participant, Workshop on the Rudiments of Academic Publishing, organised by the Linguistics Association of Ghana (LAG), African University College Communication (AUCC), Accra, Ghana, 18th January, 2019.
- Participant, Workshop on University Examinations Portal, organised by PQAU, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.

MR JAMES KWAKU DUMENYAH**Research Activities/Interests**

- Teaching French as a Foreign Language.
- French Linguistics.

Conferences/Workshops/Seminars

- Participant, Workshop on the Rudiments of Academic Publishing, organised by the Linguistics Association of Ghana (LAG), African University College Communication (AUCC), Accra, Ghana, 18th January, 2019.

ACADEMIC STAFF

Details of Academic staff of the Technical Communication Department are given in Table 24.

Table 24 Academic Staff of the Technical Communication Department

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Assoc Prof Mrs Patricia B. Mireku-Gyimah	PhD (KNUST), MPhil, BA (Hons) Dip Ed (Cape Coast), PgD Aelcf, Lcf (Bordeaux III)	Associate Professor, Head of Department and Vice Dean, Faculty of Integrated Management Science	English Language, Communication Skills, Literature in English, African Oral Literature, Literary Theory and Criticism
Dr Mrs Cecillia Addei	PhD (UWC), MA (KNUST), B.Ed (Cape Coast)	Senior Lecturer	African Oral Literature, Gender in Literary Studies, Literary Stylistics, Literary Criticism, The <i>Bildungsroman</i> and its Variants in African Literature.
Dr E. Kokroko	PhD (Cape Coast), MPhil (U de Besançon), BA (Ghana)	Lecturer, Departmental Examinations Officer	Basic French, Trainer, French as a Foreign Language, Use of Multimedia Equipment in Language Teaching
Mr E. Arhinful	MA (Ghana), B.Ed (Cape Coast)	Technical Instructor	Error Analysis, Technical Report Writing, Communication Skills
Mrs Elizabeth K. Mills Abbey	M.Ed (UEW), BA (KNUST), Cert 'A'	Assistant Lecturer	English Language and Literature, Communication Skills
Mr P. B. Ansah	MPhil (UEW), B Ed (UEW), Cert 'A'	Assistant Lecturer	Onomastics, Communication Skills, Sociolinguistics, Oral Literature
Mr J. K. Dumenyah	MPhil, BA (Ghana), Pg Cert (GIMPA), Dip DUEF (Cotonou - Benin), Cert 'A'	Assistant Lecturer	Teaching French as a Foreign Language, French Linguistics

DEPARTMENT OF MANAGEMENT STUDIES

INTRODUCTION

The Department offers two Postgraduate Masters' Programmes: Master of Business and Technology Management (MBTM) and MSc Engineering Management. The Department also runs a one-year certificate programme in Small Scale Mine and Quarry Administration. These programmes are all run on weekends (Saturdays and Sundays). The Department, apart from teaching, is actively involved in research, consultancy and extension services.

ACTIVITIES OF ACADEMIC STAFF

DR ANTHONY EWUSI

Research Activities/Interests

- Groundwater Management Studies in Ghana.
- Groundwater Quality Assessment in the Southwest Ghana.
- Management of Hydrological Projects.



Dr A. Ewusi
Head

Recent Publications

- Ewusi, A., Adatsi, E., Aikins, D. and Seidu, J. (2018), "Integrated Geophysical Study to Delineate Mineralised Zones in Southwest Ashanti Belt of Ghana", *Journal of Geoscience and Environment Protection*, Vol. 6, pp 77 - 89.
- Ewusi, A and Seidu, J. (2018), "Hydrogeology of the Granitic Rocks in the Sekyere South District of Ashanti Region, Ghana", *Journal of Geoscience and Environment Protection*, Vol. 6, pp. 252 - 263.
- Ahenkorah, I., Awuah, E. M., Ewusi, A. and Affam, M. (2018), "Geotechnical and Petrographic Characterisation of the Birimian Granitoids in Southern Ghana as an Aggregates for Sustainable Road Construction", *International Journal of Advanced Engineering Research and Science*, Vol. 5, No. 3, pp. 40 - 49.
- Asamoah, K. N. Seidu, J., Ewusi, A. and Ansah, E. (2018), "Geotechnical Investigation at Sanzule Beach, Ghana, using Seismic Refraction Tomography", *International Journal of Innovative Science, Engineering and Technology*, Vol. 5, No. 2, pp. 45 - 53.

Conferences/Workshops/Seminars

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology"; UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Consultant, Minerals and Allied Industries, Water Industry.
- Reviewer, Journal of Water and Sanitation, International Journal of Engineering and Research Technology, Journal of African Earth Science.

DR AKYENE TETTEH

Research Activities/Interests

- Supply Chain Management.
- Decision Science.
- E-Commerce.
- Economics

Conferences/Workshops/Seminars

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology"; UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Reviewer, Journal of Transport and Supply Chain Management (JTSCM), AOSIS, Journal of Economic, Management and Trade (JEMT), Sciencedomain, Journal of Global Economics, Management and Business Research (JGEMBR), International Knowledge Press, Journal of Economics and Trade (JET), International Knowledge Press, Asian Journal of Economics, Business and Accounting (AJEBA), Sciencedomain, Asian Journal of Agricultural Extension, Economics and Sociology (AJAEES), Sciencedomain, Asian Journal of Mathematics and Computer Research (AJMCR), International Knowledge Press, Archives of Current Research International (ACRI), Sciencedomain, South Asian Journal of Social Studies and Economic (SAJSSE), Sciencedomain, Journal of Basic and Applied Research International (JBARI), International Knowledge Press, Asian Research of Journal of Art and Social Science, (ARJASS), Sciencedomain, Current Journal of Applied Science and Technology, (CJAST), Sciencedomain, Asian Research Journal of Mathematics (ARJM), Sciencedomain, Asian Journal of Probability and Statistics, (AJPS), Sciencedomain, Asian Journal of Advances in Mathematics and Computer Science, (AJAMCS), Sciencedomain.

DR FRANK BOATENG**Research Activities/Interests**

- Mining Asset Retirement Obligations for Reclamation Bonds.
- Corporate Social Responsibility in the Mining Industry.
- Taxation and Fiscal Policy.
- Enterprise Risk Management.
- Corporate Governance.
- Auditing and Ethics.
- Internal Control System Management.
- Business Continuity Management.
- Accounting Information Systems.
- Entrepreneurship Management.

Recent Publications

- Owusu-Manu, D., Adam, J., Edwards, D. J., **Boateng, F.** and Asumadu, G. (2019), "The Impact of Infrastructure Development on Economic Growth in Sub-Saharan Africa with Special Focus on Ghana", *Journal of Financial Management of Property and Construction*, pp. 1 - 22.
- **Boateng, F.** and Amankwah, R. K. (2018), "Fiduciary Responsibility of Gold Mining Companies to Stakeholders: The Case of Ghana Mining Industry", *Proceedings of the 5th UMaT Biennial International Mining and Mineral Conference*, UMaT, Tarkwa, Ghana, pp. CS 1 - 8.

Conferences/Workshops/Seminars

- Participant, Africa Conference on Artisanal Small-Scale Mining and Quarrying, M. T. Aidoo Conference Hall, Ghana Shippers Council, Accra, Ghana, 28th – 29th March, 2019.
- Participant, West Africa Institute of Mining, Metallurgy and Petroleum Annual Industry Conference, M. T. Aidoo Conference Hall, Ghana Shippers Council, Accra, Ghana, 13th – 15th November, 2018.
- Participant, 19th SACCA Conference, Swiss Spirit and Suites, Alisa Hotel, Accra, Ghana, 24th – 26th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Member, Board of Directors for Ankobra West Rural Bank, Board of Directors for Ndede Group of Companies, Board of Directors for Rickman Projects Ltd., Board of Directors for Faith Montessori and Child Development Centre, Board of Governors, Agogo State Senior High School.
- Panel Member, British Council and Barclays Bank of Ghana Ready to work Summit.
- Member, Finance/Fund Raising Committee, 5th UMaT Biennial International Mining and Mineral Conference, University of Mines and Technology Tarkwa, Ghana. August

DR KOFI KAMASA**Research Activities/Interests**

- International Trade and Finance.
- Monetary and Financial Economics.
- Economic Growth and Development.
- Public Finance.
- Resource Economics.

Recent Publications

- **Kamasa, K.**, Adu, G. and Oteng-Abayie E. F. (2019), "Tax Compliance in Sub-Saharan Africa: How Important are Non-Pecuniary Factors?", *African Journal of Economic Review*, Vol. 7, No. 1, pp. 154 - 175.
- Amankwah, G., Ofori-Abebrese, G. and **Kamasa, K.** (2018), "An Empirical Analysis of the Sustainability of Public Debt in Ghana", *Theoretical Economics Letters*, Vol. 8, No. 11, pp. 20 - 38.

Conferences/Workshops/Seminars

- Participant, Workshop on University Examinations Portal, organised by PQAU, UMaT, Tarkwa, Ghana, 14th December, 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Workshop for University Examinations Officers on the Processing of Examinations Questions, organised by PQAU, UMaT, Tarkwa, Ghana, 27th September, 2018.

Outreach Programmes/Extension Services

- Facilitator, KNUST Institute of Distant Learning, Takoradi Centre.
- Reviewer, African Development Review, SAGE Open.

DR JULIANA ABAGSONEMA ABANE

Research Activities/Interests

- Citizenship Organisation Behaviour.
- Globalisation and Comparative Development.
- Human Resource Management.
- Knowledge Management in Organisations.
- Nudging Theory.
- Organisation Theory.
- Organisational Performance and Effectiveness.
- Organisational Leadership and Behaviour.
- Organisational Sustainability and Survival.
- Performance-Based Budgeting and Public Sector Budgeting.
- Performance Management and Measurement.
- Public Service Motivation, Employee Motivation and Engagement.
- Pockets of Organisational Effectiveness and Performance.
- Poverty Reduction and Sustainable Development.
- Public Sector Reforms and Management.
- Public Policy Implementation.

Recent Publication

- **Abane, J. A.** (2018), "Transitioning to SDGs in Sub-Saharan Africa: Assessing National Context Variations and Disparities on the MDG#1 in Ghana", *Global Social Welfare*, Vol. 5, No. 3, pp. 167- 178.

Conferences/Workshops/Seminars

- Facilitator, Workshop on Local Government Service Protocols for Tarkwa-Nsuaem Municipal Assembly staff, Tarkwa, 26th - 27th November 2018.
- Reviewer, Public Organisation Review, International Journal of Productivity and Performance Management.

ACADEMIC STAFF

Details of the academic staff of the Department of Management Studies are given in the Table 25.

Table 25 Academic Staff of the Department of Management Studies

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Dr A. Ewusi	PhD, MSc (TU Bradenburg), BSc (KNUST)	Senior Lecturer and Head, Department	Groundwater Resources Evaluation, Hydrogeological Studies, Environmental Impact Assessment
Dr A. Tetteh	PhD (Donghua), MSc (SUFE), BSc (KNUST)	Lecturer	Supply Chain Management, Operations/Service Management, Decision Science
Dr F. Boateng	PhD (Walden), MPhil (KNUST), MBA (Leicester), BSc (CU)	Lecturer	Mining Assets Retirement Obligation for Reclamation Bonds, CSR, Taxation and Fiscal Policy, Enterprise Risk Management, Auditing and Ethics, Corporate Governance
Dr K. Kamasa	PhD, MPhil (KNUST), B Ed (Cape Coast)	Lecturer	Monetary Economics, Public Finance, International Finance, Economic Growth
Dr J. A. Abane	PhD (NIDA), MPhil, BA (Ghana)	Lecturer	Development Management, Public Policy, Strategic Human Resource Management, Public Administration
Dr E. K. Boadi	PhD (UESTC), BMA (UPSA), BSc (GIMPA)	Part-Time Lecturer	Trends in Financial Regulations, Banking, Accounting and Finance Higher Education Management

The Administrative Staff of the Departments in the Faculty are presented in Table 26.

Table 26 Administrative Staff of the Faculty

Name	Qualification	Designation	Department
Abigail A. A. Hagan	MA (UEW), CEMPA (KNUST), BA (Ghana)	Principal Administrative Assistant	Technical Communication
Ms Mavis A. Tetey	BA (KNUST)	Principal Administrative Assistant	Management Studies

SCHOOL OF POSTGRADUATE STUDIES

INTRODUCTION

The School of Postgraduate Studies (SPS) runs MSc/MPhil and PhD programmes in Geomatic, Geological, Mining and Minerals Engineering and Mathematics and MPhil/MSc programmes in Mechanical, Electrical and Electronic, and Petroleum Engineering. In addition, the School runs MSc in Engineering Management, and Master of Business and Technology Management. The School also offers special PhD programmes in Petroleum, Environmental and Safety, Mechanical, Electrical and Electronic, Computer Science and Engineering for the purpose of staff development.

STAFFING

The Office of the Dean, School of Postgraduate Studies, has three members of staff as follows:

Prof William K. Buah	-	Dean
Mr Robert Ewusi Ntenah	-	Principal Administrative Assistant
Mr Jessey Yaw Hagan	-	Senior Accounting Assistant



Prof W. K. Buah
Dean SPS

THE BOARD OF POSTGRADUATE STUDIES

The Board of Postgraduate Studies which oversees the administration of the School has the following members:

Prof W. K. Buah	Dean, School of Postgraduate Studies	- Chairman
Assoc Prof Grace Ofori-Sarpong	Dean, Faculty of Mineral Resource Technology	- Member
Assoc Prof Anthony Simons	Dean, Faculty of Engineering	- Member
Prof R. K. Amankwah	Dean, Faculty of Integrated Management Science	- Member
Dr Peter E. Baffoe	HOD, Geomatic Engineering Department	- Member
Assoc Prof Michael Affam	HOD, Geological Engineering Department	- Member
Dr George Agyei	HOD, Mining Engineering Department	- Member
Assoc Prof James R. Dankwah	HOD, Minerals Engineering Department	- Member
Dr Saviour Mantey	HOD, Petroleum Engineering Department	- Member
Assoc Prof Samuel Ndur	HOD, Environmental and Safety Engineering Department	- Member
Mr Seth P. Agbomadzi	HOD, Mechanical Engineering Department	- Member
Dr Solomon Nunoo	HOD, Electrical and Electronic Engineering Department	- Member
Dr Issaka Yakubo	HOD, Mathematical Sciences Department	- Member
Dr Anthony Ewusi	HOD, Management Studies Department	- Member
Mr Robert Ewusi Ntenah	Principal Administrative Assistant	- Ag. Secretary

STUDENT ENROLMENT

The total number of students enrolled in postgraduate programmes for the 2018/2019 academic year stood at two hundred and seventeen (217). Details of the distribution by Department and programme are presented in Tables 27 to 37.

Table 27 Enrolment in Geomatic Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	3	2	1	6
2	3	0	1	4
3	2	0	1	3
4	1	0	0	1
5	0	0	0	0
Total	9	2	3	14

Table 28 Enrolment in Geological Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	4	0	3	7
2	2	3	1	6
3	5	1	1	7
4	9	0	1	10
5	0	0	1	1
Total	20	4	7	31

Table 29 Enrolment in Mining Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	5	5	2	12
2	6	0	2	8
3	5	1	2	8
4	12	2	0	14
5	0	0	0	0
Total	28	8	6	42

Table 30 Enrolment in Minerals Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	3	3	2	8
2	5	2	1	8
3	1	1	2	4
4	9	0	0	9
5	0	0	0	0
Total	18	6	5	29

Table 31 Enrolment in Petroleum Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	0	0	2	2
2	4	0	0	4
3	0	0	1	1
4	0	0	0	0
5	0	0	0	0
Total	4	0	3	7

Table 32 Enrolment in Environmental and Safety Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	0	0	2	2
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
Total	0	0	2	2

Table 33 Enrolment in Mechanical Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	0	0	0	0
2	1	2	0	3
3	0	0	1	1
4	0	0	2	2
5	0	0	0	0
Total	1	2	3	6

Table 34 Enrolment in Electrical and Electronic Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	4	5	3	12
2	3	4	0	7
3	6	5	1	12
4	0	0	2	2
5	0	0	0	0
Total	13	14	6	33

Table 35 Enrolment in Mathematical Sciences Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	0	7	3	10
2	0	3	1	4
3	0	0	1	1
4	0	0	11	11
5	0	0	0	0
Total	0	10	16	26

Table 36 Enrolment in Computer Science and Engineering Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	0	0	2	2
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
Total	0	0	2	2

Table 37 Enrolment in Management Studies Department

Year	PROGRAMME			
	MSc	MPhil	PhD	Total
1	25	0	0	25
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
Total	25	0	0	25

COMPLETION OF PROGRAMME

A total of fifty-five (55) Postgraduate students graduated in the 2017/2018 academic year. The details are given in Table 38.

Table 38 Graduate Output 2017/2018

Department	MSc	MPhil	PhD	Total
Geomatic Engineering	1	1	2	4
Geological Engineering	9	1	0	10
Mining Engineering	12	2	0	14
Minerals Engineering	4	1	2	7
Petroleum Engineering	0	0	0	0
Environment & Safety Engineering	0	0	0	0
Mechanical Engineering	3	1	0	4
Electrical and Electronic Engineering	6	1	1	8
Mathematical Sciences	1	3	4	8
Total	36	10	9	55

SEMINARS

The School organised twenty-one (21) Postgraduate Seminars. Postgraduate Students made presentations and were assessed as part of the requirements for graduation.

THE OFFICE OF THE REGISTRAR

INTRODUCTION

The Office of the Registrar is a critical interface between the University and students, staff and the public and provides essential services to students, Academic Departments, Administrative Units and the public. The Office of the Registrar supports teaching and learning by maintaining the integrity of academic policies and the student information system.

In discharging the functions of the Office, the Registrar, who is also Secretary to the University Council and Academic Board, is assisted by other Administrative Units which provide a wide range of professional and administrative services to the University Community, the mining industry and other related fields.

The Units that assist the Registrar in the day-to-day administration of the University are:

- Academic and Student Affairs Unit.
- Human Resources Unit.
- Guidance and Counselling Unit.
- General Administration Unit.
- University Relations Office.
- University Legal Services Unit.
- Institutional Affiliation Office.
- Faculty/School Administrative Units.

During the year under review, the Office of the Registrar organised workshops for Deans, Heads of Departments, Sectional Heads and Units on Ethics in University Administration for them to be ethical in the discharge of their duties as part of University Management. In addition, the Registrar organised an Orientation for all the administrative staff on their roles and responsibilities as administrative assistants in the University and to be familiar with the University Act, Statutes and some of the recorders with the objective of making them conversant with the rules and regulations that govern the University.

UNITS UNDER THE REGISTRAR'S OFFICES

Academic and Students Affairs Unit

The Academic and Student Affairs Unit is primarily responsible for performing duties on behalf of the Registrar in relation to admissions, academic issues as well as students' welfare in the University. It liaises with Faculties and Departments as well as the School of Postgraduate Studies on academic and welfare matters affecting students. It also collaborates with the Office of Dean of Students, University Chaplaincy, the Students Representative Council (SRC) and the Graduate Students Association of Ghana (GRASAG) to regulate student life in the University. During the year under review, the Academic and Student Affairs Unit was able to achieve, to a large extent, its core objectives.

The activities for the year under review included:

- The processing and releasing of admission application forms for sale, receiving and processing completed admission application forms and admission of students in collaboration with the Admissions Committee.
- Liaising with the Finance Officer on the payment of fees.
- Keeping records of all students.
- Facilitating the issuance of identity cards to fresh students.
- Processing of introduction letters, application for travelling documents, etc. for students on request.

Human Resource Unit

The Human Resource Unit assists the University to recruit, develop, motivate and retain high calibre staff in the University. One of the primary objectives of this Unit is to provide the human resource information that employees of this University require to enable them effectively discharge their highly skilled and well-qualified professional obligations towards the building of the University and the nation. The Unit is responsible for overseeing welfare matters, leave and exit matters, as well as annual staff assessment.

Guidance and Counselling Unit

The Guidance and Counselling Unit offers advice and guidance to students and staff in the University. Guidance and Counselling helps to explore and manage whatever is happening in one's life. The services available at the Unit, therefore, are aimed at helping students and staff to cope with and go through challenging situations and provide them with opportunities to move towards more satisfying and purposeful lives.

General Administration Unit

The General Administration Unit oversees the provision of all municipal services in the University. These include Maintenance, Transport, Grounds and Gardens, Security, Health, Works and Physical Development and Estate Organisation. The Unit supervises the auctioning of all University unserviceable vehicles and equipment.

The University Relations Office

The University Relations Office is responsible for marketing the programmes of the University, organising official University functions and advancing the public's consciousness about the University. Its major responsibilities are to project and maintain the good image and identity of the University. The Office liaises with the print and electronic media to disseminate information on events and activities of the University to all stakeholders. It also deals with alumni relations by developing and sustaining a dynamic alumni and their involvement in the University. The University Relations Office also plays a vital facilitative role in the organisation of all official University functions.

Legal Services Unit

The Legal Services Unit is the in-house corporate legal office of the University and is responsible for all legal matters of the University. In carrying out that responsibility, the Legal Counsel handles all aspects of the University's legal services including litigation, and advising the University on all disciplinary matters affecting Staff and Students of the University in relation to the Law. It also prepares for and on behalf of the University all conveyances including contract agreements, memoranda of understanding, advising the University on all Labour and Industrial matters involving the University and its Unionised Associations.

Institutional Affiliation Office

The Institutional Affiliation Office (IAO) is in charge of the direct oversight and supervising responsibilities of University Colleges that are running programmes similar to those of UMaT and are affiliated to UMaT.

Faculty/School Administrative Units

Senior/Assistant Registrars at these units provide the platform for the units and other Committee meetings of the Faculties/School by providing secretarial and other support services. They also assist the Deans with administrative and managerial support for the smooth running of the offices.

ACTIVITIES OF STAFF

REGISTRAR

Andrews K. Doku, MA, BA (KNUST), MIHRMP, FGIM, FCIDA

MR ANDREWS KINGSLEY DOKU

Research Activities/Interests

- Micro and Macroeconomic Analysis.
- Monetary theory and Practice.
- Public Policy Analysis.
- Public Sector Economics.
- Governance and Management of Higher Education Institutions.



Andrews K. Doku
Registrar

Conferences/Workshops/Seminars

- Participant, National Stakeholder Forum on Tertiary Education Reforms, organised by National Council for Tertiary Education (NCTE), University of Ghana, 14th June, 2019.
- Resource Person, Workshop on Quality Support for Kumasi Technical University, Kumasi-Ghana, 7th – 15th March, 2019.
- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Resource Person, Workshop on Quality Support, Kumasi Technical University, Kumasi, Ghana, 7th - 15th March, 2019.
- Resource Person, Talk on "University Governance and Administration", Orientation for Newly Appointed Staff (Teaching and Non-Teaching), organised by PQAU, UMaT, Tarkwa, Ghana, 24th - 25th January, 2019.
- Participant, Workshop on Centralised Admissions for Public Universities, Ghana, The Association of Commonwealth Universities (ACU), Wolburn House, 20 - 24 Tavistock Square, London, 25th - 30th November, 2018.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT,

Tarkwa, Ghana, 11th October, 2018.

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes /Extension Services

- Vice Chairman, Minescho Credit Union.

MR FRANCIS NYARKO

Research Activities/Interests

- Population and Social Development Issues.
- Health, Education and Housing Needs.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students’ Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programme

- President, Ghana Association of University Administrators (GAUA), UMaT Branch.

MR THOMAS BRIGHT ESHUN

Research Activities/Interests

- Waste management.
- Environmental Impact Assessment.
- Corporate Environmental Management.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students’ Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programme

- President, Community Builders Foundation, Tarkwa Nsuaem Municipal Assembly.
- Member, Registration and Information Sub-Committee, 5th UMaT Biennial International Mining and Mineral Conference.

MRS LYDIA EPHRAIM

Research Activities/Interests

- Development Policy and Planning.
- Human Resource Management.
- Gender and Development.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach programmes/ Extension Services

- Assistant Secretary, Ghana Association of University Administrators (GAUA), UMaT Branch, Ghana.
- Thesis Supervisor, Executive Master of Business Administration Students, KNUST, Ghana.

MS MARGARET MARY SACKEY

Research Activities/Interests

- Recruitment and Retention of Staff.
- University Administrative Systems.
- Urban Developmental Issues.
- Population and Development.
- Child Malnutrition Issues.
- Gender Related Issues.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Member, Registration and Information Sub-Committee, 5th UMaT Biennial International Mining and Mineral Conference.

ERIC ANTHONY VURINYE KAVARPUO

Research Activities/Interests

- Academic Research/Project Grants Administration.
- Political Economy Research.
- Economic Policy Analysis for Development.
- Social and Spatial Dimensions of Development.
- Development Planning, Administration and Management.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Member, National Education Quality Improvement Committee and Firm Health Foundation, Tarkwa.
- Consultant, Governance Project (2017 - 2020), TEPPCON-Konrad Adenauer Stiftung and Kelmeg Foundation - Tarkwa Traditional Council.

MR PETER SIMON KWOFIE**Research Activities/Interests**

- Human Resources.
- Educational Administration.
- Decision-Making in Administration.
- Counselling

Recent Publication

- Andoh-Robertson, T., Kwofie, P. S., Yeboah, P. Y. A. and **Edonu, K. K.** (2019), "Attitudes of Students Towards Seeking Counselling Services, the Case of University of Mines and Technology, Tarkwa, Ghana", *The International Journal of Humanities & Social Studies*, Vol. 12, No. 4, pp. 49 - 57.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology"; UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programmes/Extension Services

- Producer/Presenter, "Know Yourself", Dynamite FM.
- Assistant Examiner, College of Distance Education (CoDE), Cape Coast.

MR ISAAC ADDEI**Research Activities/Interests**

- Development Planning.
- Corporate Social Responsibility.
- Health, Population and Development Issues.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology"; UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach programmes/ Extension Services

- Assistant Examiner, West African Examinations Council.

THEOPHILUS ANDOH-ROBERTSON**Research Activities/Interests**

- Academic and Career Counselling.
- Occupational and Stress Management.
- Marriage and Family Life Counselling.
- HIV/AIDS Counselling.
- Educational Management and Administration.

Recent Publications

- Andoh-Robertson, T., Kwofie, P. S., Yeboah, P. Y. A. and **Edonu, K. K.** (2019), "Attitudes of Students Towards Seeking Counselling Services, the Case of University of Mines and Technology, Tarkwa, Ghana", *The International Journal of Humanities and Social Studies*, Vol. 12, No. 4, pp. 49 - 57.
- **Andoh-Robertson, T.** and Ofori, N. K. (2018). "HIV Testing and Counselling among the Youth of Ghana: The Case of Tarkwa-Nsuaem and Fanteakwa Districts", *Advances in Social Sciences Research Journal*, Vol. 5, No. 6, pp. 199 - 213.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Zonal Conference on Dealing with Emotional Disorders as 21st Century Counsellors, (GNACC), Holy-Child Auditorium, Takoradi, 1st March, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, 2nd Annual International Conference for Counsellors and Associates (ICCA), British Council Hall, Accra, 19th - 20th October, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018..

Outreach Programme/Extension Services

- Chairman, Board of Governors, Enyanmaim Community Senior High School.
- Resource Person, Workshop on Test Construction and Administration for Basic School Teachers, UBaS, Tarkwa, Ghana, 8th to 9th February, 2018.
- Editor, Ghana Association of University Administrators (GAUA), UMaT Branch, Ghana.

PAUL Y. A. YEBOAH**Research Activities/Interests**

- Corporate Social Responsibility.
- Business Policy Planning, Development and Management.
- Development Communication and Media Relations.
- Event Organisation and Management.
- Local Economic Development.
- Social Entrepreneurship Development.

Recent Publication

- Andoh-Robertson, T., Kwofie, P. S., Yeboah, P. Y. A. and **Edonu, K. K.** (2019), "Attitudes of Students Towards Seeking Counselling Services, the Case of University of Mines and Technology, Tarkwa, Ghana", *The International Journal of Humanities and Social Studies*, Vol. 12, No. 4, pp. 49 - 57.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQUA, UMaT,

Tarkwa, Ghana, 11th October, 2018.

- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

Outreach Programme/Extension Services

- Member, Council of Enchi College of Education, Registration and Information Sub-Committee, 5th UMaT Biennial International Mining and Mineral Conference, Justice and Peace Commission, St. Matthew's Catholic Church, Tarkwa.
- Resource Person, Workshop for Departmental Administrators on Processing of Vice Chancellor's Report and Basic Statistics of the University, 28th February, 2019.
- Acting General Manager, Dynamite FM Radio Station.
- Secretary, Ghana Association of University Administrators (GAUA), UMaT Branch.

MRS ROSINA KIZZIE-HAYFORD

Research Activities/Interests

- Sustainability Studies.
- Research/Project Grants Administration.
- University-Industry Research Collaborations.
- Corporate Social Responsibility.
- Organisational Dimensions of Management Information Systems.

Conferences/Workshops/Seminars

- Participant, Seminar for Convocation on University Intellectual Property Policy, 2nd April, 2019.
- Participant, Seminar for Members of Convocation on Data Ethics and Skills for Reproduction of Research Findings Using Stat and the use of Turnitin Application, 22nd November, 2018.
- Participant, A 2 -day Workshop on Grant Proposal Development held 17th - 18th October, 2018.
- Participant, Seminar for Convocation on Mentorship role of academic tutors on students' academic and psychological wellbeing and Orderly presentation of investigative and Disciplinary Committee Reports, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MRS FLORENCE ANTWIWAA ABOH

Research Activities/Interests

- Strategic Project Management.
- Entrepreneurship (Women Entrepreneurs).
- Research Administration.
- Organisational Behaviour.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Entrepreneurship/Incubator Support Systems for Higher Education Institutions (HEIS) in Ghana, Takoradi Technical University, 29th October - 2nd November, 2018.
- Resource Person, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on “Expanding the Frontiers of Mining Technology”, UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

MR DAVID KWEKU GYAPONG

Research Activities/Interests

- Corporate Law.
- Land Law.
- Property Management.
- Litigation.
- Corporate Finance and Investment Law.

Conferences/Workshops/Seminars

- Participant, Orientation for Newly Appointed Staff (Teaching and Non-Teaching), organised by PQAU, UMaT, Tarkwa, Ghana, 24th - 25th January, 2019.

MR ROWLAND PHILIP BAFFOE

Research Activities/Interests

- Strategic Project Management.
- Managing Organisations.
- Total Quality Management.
- Service Operations Management.

Conferences/Workshops/Seminars

- Participant, Seminar on Psychological Stress and Burnout Management for junior and senior staff of the University held on 28th August, 2018
- Participant, Seminar on Electronic Resources for teaching and learning held on 13th September, 2018.
- Participant, Workshop for University Examinations Officers on the Processing of Examinations Questions held on 27th September, 2018
- Participant, Seminar for Members of Convocation on Mentorship role of academic tutors on students' academic and psychological wellbeing and Orderly presentation of investigative and Disciplinary Committee Reports held on 11th October, 2018.
- Participant, A 2-day Workshop on Grant Proposal Development held on 17th and 18th October, 2018.
- Participant, Seminar for Members of Convocation on Data Ethics and Skills for Reproduction of Research Findings Using Stat and the use of Turnitin Application held on 22nd November, 2018.
- Participant, Orientation for Newly Appointed Staff (teaching and non-teaching) held on 24th to 25th January, 2019.
- Participant, 3-Day Training Programme on the Conduct of the Annual Procurement Assessment Exercise held on 28th January to 1st February, 2019 at GIMPA, Accra.
- Participant, Workshop for Departmental Administrators on processing of Vice Chancellor's Report and Basic Statistics of the University held on 28th February, 2019
- Participant, Seminar for Members of Convocation on University Intellectual Property Policy held on 2nd April, 2019.
- Participant, Seminar for Members of Convocation on University Intellectual Property Policy held on Tuesday, 2nd April, 2019.

Outreach programmes/Extension Services

- University Internal Assessor, Public Procurement Authority (PPA).
- Part-time Tutor, College of Distance Education (CoDE), University of Cape Coast, Cape Coast.

MICHAEL FYNN HAMMOND

Research Activities/Interests

- Human Resource Management.
- Higher Education Administration.
- Leadership and Governance.

REGISTRAR'S OFFICE STAFF

Details of senior members of the Registrar's Office are given in Table 39.

Table 39 Senior Members of the Office of the Registrar

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr A. K. Doku	MA, BA (KNUST), MIHRMP, FGM, FCIDA	Registrar	Microeconomic and Macroeconomic Analysis, Monetary Theory and Practice, Public Sector Economics, Governance and Management of Higher Education Institutions
Mr F. Nyarko	MA, BA (Ghana)	Senior Assistant Registrar, Human Resource Unit	Population and Development, Population Problem, Sociological Impact of Population Growth
Mr T. B. Eshun	MA, BA (Cape Coast)	Senior Assistant Registrar Academic Affairs	Waste Management, Environmental Impact Assessment, Corporate Environmental Management
Mrs Lydia Ephraim	MSc, BA (KNUST)	Senior Assistant Registrar, General Administration	Development Policy and Planning, Human Resource Management
Ms Margaret M. Sackey	MA (Cape Coast), MPhil, BA (Ghana)	Senior Assistant Registrar, Faculty of Integrated Management Science	Manpower Planning and Development, Recruitment and Retention of Staff, University Administrative Systems, Urban Developmental Issues, Population and Development
Mr E. A. V. Kavaarpuo	MSc (KNUST), BA (Ghana)	Senior Assistant Registrar, Office of Research, Innovation and Consultancy	Project Grants Administration, Social Development Research, Development Planning Process, Spatial Dimensions of Development Administration and Management
Mr P. S. Kwofie	MEd, PGDE, BA (Cape Coast), Adv Dip (UK)	Senior Assistant Registrar, Faculty of Mineral Resource Technology	Educational Management and Administration, Counselling and Relationship Management, Leadership and Decision Making Educational Policy Analysis
Mr I. Addei	MSc (KNUST), BA, Dip Ed (Cape Coast)	Assistant Registrar, Faculty of Engineering	Development Planning, Corporate Social Responsibility, Health and Population Issues, Human Resource Management
Mr P. Y. A. Yeboah	MBA (Milan), MSc, BA (KNUST), MIPR	Assistant Registrar, University Relations Office	Development Policy and Planning, Corporate Social Responsibility, Fund Raising, Small Business Planning and Development and Management, Development Communication, Event Organization and Management, Socio-Economic Analyst and Entrepreneurship Development
Mr T. Andoh-Robertson	MPhil, B.Ed (UEW)	Assistant Registrar, Guidance and Counselling	Counselling, Educational Management and Administration
Mrs Rosina Kizzie-Hayford	MSc (RH, UL), PgD (MSM), BSc (KNUST)	Assistant Registrar, Student Affairs	Sustainability Studies, Research/Project Grants Administration, University-Industry Research Collaborations, Corporate Social Responsibility, Organisational Dimensions of Management Information Systems.
Mrs Florence A. Aboh	MBA (KNUST), B.Ed (UEW)	Assistant Registrar, Office of Research, Innovation and Consultancy	Strategic Management, Entrepreneurship, (Women Entrepreneurs) Research Administration, Organisational Behaviour, Project Management,
Mr D. K. Gyapong	BL, LLB, MBA (Ghana), B.Com (Cape Coast)	Assistant Registrar, Head, Legal Unit	Corporate Law, Land Law, Property Management, Litigation, Corporate Finance and Investment Law
Mr R. P. Baffoe	MBA (GIMPA), BMS, DMS (Cape Coast), Cert 'A'	Junior Assitant Registrar	Project Management, Strategic Management, Managing Organisations, Total Quality Management, Service Operations Management
Mr M. F. Hammond	MBA, B Ed (Cape Coast)	Junior Assitant Registrar	Human Resource Management, Higher Education Administration, Leadership and Governance

ADMINISTRATIVE STAFF

Details of administrative staff of the Office of the Registrar are given in Table 40.

Table 40 Administrative Staff of the Registrar's Office

Name	Academic/Professional Qualification	Designation and Current Position	Office
Mr E. Yanney	BA (KNUST)	Chief Administrative Assistant	Academic and Students Affairs
Ms Grace O. Awusi	PS (NSEOM-GES)	Principal Administrative Assistant	Registrar's Office
Mr R. Ewusi-Ntenah	MA, BMS, Dip (Cape Coast)	Principal Administrative Assistant	School of Postgraduate Studies
Mr Jacob Tawiah	MBA (Cape Coast), BBA (KNUST)	Senior Administrative Assistant	Finance Office
Mr M. K. Koomson	MPhil (KNUST), BA (Cape Coast)	Senior Administrative Assistant	Academic and Students Affairs
Mr M. O. Mensah	MBA, CEMBA (KNUST), BMS (Cape Coast)	Senior Administrative Assistant	Ghana Mining Journal Office
Mrs Mabel Freeman	HND (T'di Poly)	Administrative Assistant	Registrar's Office

FINANCE OFFICE

INTRODUCTION

The Finance Office provides professional financial services that are delivered efficiently by maintaining the highest level of ethics and integrity in support of the University's mission. The Office is responsible for recording the inflow and outflow of the University's financial resources and also ensures that the University's financial resources are used for the intended purposes. The Finance Office provides financial information to the University Council and other bodies to enable them to make informed decisions. It also, prepares the University's annual statutory financial statements to meet internal and external financial reporting requirements.

Other responsibilities of the Finance Office include identifying and managing financial and operational risks, monitoring, reporting and directing financial performance. It is also responsible for ensuring efficient treasury management and funding strategy, provision of accounting services to the main administration, faculties, departments and hall units. The Finance Office also prepares budget and provides procurement services for the University. The Office is responsible for the collection and administration of students' fees.

These responsibilities are fulfilled through Units such as Final Accounts, Treasury, Payables/Budget, Payroll/MIS, Procurement, Stores and Supplies. The Finance Office has Accounts offices at the following units:

- School of Postgraduate Studies (SPS).
- Faculty of Mineral Resources Technology (FMRT).
- Faculty of Engineering (FOE).
- Faculty of Integrated Management Science (FIMS).
- Office of Research, Innovation and Consultancy (ORIC).
- University Basic School (UBaS).
- Hall Council.
- Dynamite FM.

During the year under review, the Finance Office continued its prudent management of financial resources and pursued other strategic investment initiatives on behalf of the University.

ACTIVITIES OF STAFF

ACTING FINANCE OFFICER

Mr Jonathan Sakoe, MBA (Ghana), BEd (UCC), CA

MR JONATHAN SAKOE

Research Activities/Interests

- Risk Management.
- Microfinance.
- Auditing and Control Systems.
- Financial Reporting.

Conferences/Workshops/Seminars

- Resource Person, Orientation for Newly Appointed Staff (Teaching and Non-Teaching), organised by PQAU, UMaT, Tarkwa, Ghana, 24th - 25th January, 2019.

Outreach Programmes/Extension Services

- Member, Audit Committee, Bia West District Assembly, Audit Committee, Amenfi Central District Assembly, Audit Committee, Aowin District Assembly, Institute of Chartered Accountants, Ghana (ICAG).
- Secretary, UMaT GUSSS Management Committee.
- Treasurer, Ghana Association of University Administrators and Professionals (GAUA), UMaT.

MR THOMAS KWAME NKUMAH

Research Activities/Interests

- Internal Control.
- Risk Management.
- Auditing.



Mr Jonathan Sakoe
Ag. Finance Officer

Outreach Programmes/Extension Services

- Secretary, Supervisory Committee, Minescho Credit Union.

MR JAMES BOSOMTWE**Research Activities/Interests**

- Corporate Social Responsibility.
- Quality Management.

Conferences/Workshops/Seminars

- Participant, Workshop on Preparation of Comprehensive Financial Statement, organised by the National Council for Tertiary Education, 12th February, 2019.
- Participant, Seminar on Overview of Public Financial Management in Ghana, organised by the Institute of Chartered Accountants, Ghana (ICAG), February, 2019.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.

Outreach Programmes/Extension Services

- Audit Committee Member, Asutifi North District Assembly.

FINANCE OFFICE STAFF

Details of senior members of the Finance Office and other staff are given in Tables 41 and 42.

Table 41 Senior Members of the Finance Office

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr Jonathan Sakoe	MBA (Ghana), B.Ed (UCC) MICA (Ghana),	Senior Accountant, Acting Finance Officer	Accounting, Auditing, Taxation, Microfinance,
Mr. Kwame Nkrumah	MSc (KNUST)	Accountant, Head, Treasury	Accounting, Auditing, Taxation
Mr James Bosomtwe	CEMBA (KNUST), ICA (Ghana),	Accountant, Head Budget and Payables	Corporate Social Responsibility and Quality Management

Table 42 Other Staff of the Finance Office

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr A. K. Boahen	ICA (Ghana), MBA (Cape Coast), BSc (UEW)	Chief Accounting Assistant	Head, Final Accounts
Mr C. A. Yuorkuu	ICA (Ghana)	Principal Accounting Assistant	Head, Payroll
Ms Joyce Laryea	MBA, CEMBA (KNUST), B Com (Cape Coast)	Principal Accounting Assistant	Main Accounts
Ms Juliet A. Osei-Afoakwa	MBA (GIMPA), B. Ed (UEW)	Principal Accounting Assistant	Main Accounts
Mr H. K. Kpodo	CEMBA (KNUST), B Com (Cape Coast)	Chief Accounting Assistant	Faculty Accounts (FMRT)
Mr S. Yankson	B Com (Cape Coast)	Principal Accounting Assistant	Main Accounts
Mr I. Bronyah	MBA (KNUST), B Com (Cape Coast)	Principal Accounting Assistant	Accounts Officer, Basic School
Mr D. Oppong-Cudjoe	GCE A'Level	Principal Accounting Assistant	Main Accounts/Payroll
Ms J. M. Ndur	GCE A'Level	Principal Accounting Assistant	Accounts Officer, Basic School
Mr M. D. Yomoh	MSc (Coventry), BSc (UPSA)	Principal Accounting Assistant/ Procurement Officer	Procurement
Ms M. Ansah	MBA (KNUST), B Com (Cape Coast)	Senior Accounting Assistant	Faculty Accounts (FoE)
Mr J. Y. Hagan	B. B Com (Cape Coast)	Senior Accounting Assistant	Faculty Accounts (SPS)
Mr S. Appiah-Mantey	HND (K'dua Poly)	Principal Stores Superintendent	General Stores and Supply
Mr F. A. Twum Oppong	HND (T'di Poly)	Accounting Assistant	Hall Bursar
Ms D. Afranie	HND (T'di Poly)	Procurement Assistant	Procurement
Ms F. E. Abraham	GCE O'Level	Stores Superintendent	General Stores and Supply
Mr A. Adarkwa	BSc (KNUST)	Senior Procurement Assistant	Procurement
Mr K. K. Ofori	BSc (KNUST)	Senior Accounting Assistant	Main Accounts
Ms R. Baah	HND (T'di Poly)	Accounting Assistant	Main Accounts

INTERNAL AUDIT UNIT

INTRODUCTION

The Internal Audit Unit exists as an independent governance entity within the University. It provides objective and independent assurance and consulting services in the areas of internal controls, governance and risk management. The Unit reports administratively to the Vice Chancellor and functionally to the Audit Committee. The Unit also reports quarterly in accordance with the Public Financial Management Act, 2016 (Act 921).

During the year under review, the Unit conducted various audit activities and followed up on status of implementation of audit recommendations within the University and submitted reports accordingly.

ACTIVITIES OF STAFF

MR SAMUEL EFFAH

Research Activities/Interests

- Auditing and Internal Control Systems.
- Financial Reporting Standard.
- Treasury Management.
- Sustainability Reporting.
- Corporate Governance.



Mr Samuel Effah
Head

Conferences/Workshops/Seminars

- Participant, Workshop on the Functions of Audit Committees in the Health Sector, organised by the Institute of Chartered Accountants, Ghana (ICAG), Takoradi Chapter, March, 2019.

Outreach Programmes/Extension Services

- Resource Person, Provision of Quality Assurance Support to Kumasi Technical University (KsTU) on University Financial Management System and Internal Audit Functions and Operating Systems, Kumasi Technical University, Kumasi, February, 2019.
- Chairman, Finance and Fund-Raising Sub-Committee of the 5th UMaT Biennial International Mining and Mineral Conference, Audit Committee of Wassa Amenfi East Municipal Assembly and GAUA Welfare Committee, UMaT Local Branch.
- Member, GUSSS Loans Management Committee, Monitoring and Evaluation Committee, UBaS.
- Treasurer, GAUA, UMaT Local Branch.
- Audit Committee Member, Wassa Amenfi East Municipal Health Directorate, Bodi District Health Directorate, Berekum East Municipal Assembly and Takoradi Technical University

AUDIT UNIT STAFF

Details of staff of the Audit Unit are given in Table 43.

Table 43 Audit Unit Staff

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr S. Effah	MBA (UK), FCCA, IIAG, ICA (Ghana)	Senior Assistant Internal Auditor and Head	Auditing and Internal Control Systems, Finance and Investment, Corporate Governance, Accounting Taxation, Sustainability Reporting and Human Resource Management
Mr E. K. Y. Smith,	CEMBA (KNUST), BA (Ghana) CFIAA (UPSA)	Chief Auditing Assistant	Auditing, Accounting, Quality Assurance, Forensic and Investigative Accounting and Auditing, Business Administration, Risk Management and Fraud Prevention
Mr C. K. M. Awute	ICA (Ghana), IIAG, CEMBA (KNUST), B. Com (Cape Coast), HND (K'dua Poly)	Chief Auditing Assistant	Auditing, Accounting, Corporate Governance and Post-Auditing, Verification and Inspection, Risk Management
Mr E. Frempong	MSc (Ghana), ICA Part II, B. Com (Cape Coast), HND (T'di Poly)	Principal Auditing Assistant	Procurement, Accounting, Auditing, Risk Management, Verification and Inspection

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr J. G. Abeiku- Acquah	B. Com, D. Com (Cape Coast)	Principal Auditing Assistant	Pre-Audit and Investigation
Miss Comfort Dakudzi	B. Com (Cape Coast), HND (K'dua Poly)	Senior Auditing Assistant	Pre-Audit and Investigation
Mr F. A. Nkumfo	B. Com (Cape Coast), HND (Ho Poly)	Senior Auditing Assistant	Risk Management, Pre-Audit and Investigation
Mr J. Woode	MSLC	Departmental Assistant Grade I	

THE UNIVERSITY LIBRARY

INTRODUCTION

The Library, as the heart of the academic life and work of the institution, continued to perform its core function of supporting the teaching, learning and research activities of the University. Its collection is fully accessible on the Online Public Access Catalogue (OPAC) on the University's Local Area Network (LAN). Efforts are being made for users to directly access all electronic resources when off campus. The Library is a member of the African Libraries and Information Association (AfLIA), Consortium of Academic and Research Libraries in Ghana (CARLIGH) and the Ghana Library Association (GLA). The Library also benefits from training programmes by virtue of the University's membership in the Association of African Universities (AAU).

ACTIVITIES

The Library coordinated the fourth edition of An Exhibition of Materials Used in Teaching, Learning and Research in the Mining, Technology and Allied Industries during the 10th Congregation of the University, which was held on 21st July, 2018. Once again, the Safety Department of Gold Fields Ltd., Tarkwa, brought an impressive collection while the Department of Geomatic Engineering exhibited different models of drones.

The Library rendered a consultancy service to the Nursing and Midwifery Training College, which happens to be the only other public tertiary institution in the municipality. The Library also coordinated the production of booklets for the University's training programme for small-scale miners.

COLLECTION AND SERVICES

Printed Stock

The Library's collection continued to grow through donations from individuals and corporate bodies. One hundred and fifty-four (154) volumes/books were added to the stock in the past year, to bring the total book stock to five thousand, eight hundred and one volumes (5 801). The Electoral Commission, Ghana and Centre for Scientific and Industrial Research exercised their mandate to lodge copies of their publications with the country's public universities. There are eighty-six (86) periodicals of various titles spanning several years.

The exchange of the University's journals (Ghana Mining Journal and Ghana Journal of Technology) with those of the Institute of Materials, Minerals and Mining (IOM3), United Kingdom continued. IOM3 also continued abstracting articles from the University's journals in Information on Mining, Metallurgy and Geological Exploration (IMMAGE), a reference database for the international mineral industry. j

The underlisted made donations to the Library:

- Prof Boniface K. Alese, UMaT, Tarkwa
- Centre for African Wetlands, Legon
- Macaw Construction and Concrete Products, Takoradi
- National Council for Tertiary Education, Accra
- International Food Policy Research Institute, Accra
- Dr Donkor Fordwor
- EPP Books Services, Accra
- Amenfiman Rural Bank, Tarkwa
- Prof Richard K. Amankwah, UMaT, Tarkwa
- Prof Zacheus O. Opafunso, UMaT, Tarkwa
- Dr Kofi Busia

Electronic Resources

The total number of electronic resources made up of journals and bibliographic databases the Library subscribed through our membership to CARLIGH reached forty-four (44). These can be accessed on the University network. Other open access resources were subscribed to via institutional registration.

The Library successfully migrated to KOHA as its library management software (LMS), which is widely used by tertiary institutions in the country. The University's Institutional Repository (IR), UMaTSpace was also created which will facilitate in publicising the University and its activities.

Technical Support Services

The photocopier-scanner-printer played a significant role in the production of the booklets for the Small-Scale Mining Training Programme which the University runs. It also enabled the Library to render reprographic services to the University

community and neighbouring educational institutions. Students have been able to make print-outs when physically present in the Computer Centre. A Print Management Software (PMS) would be acquired to make it possible for users to print from any digital device and terminal, irrespective of their location within the Library. Staff of the Library coordinated and bound the project reports of final year students in order to maintain quality.

ACTIVITIES OF STAFF

LIBRARIAN (ACTING)

MS KORKLU ABAYIE LARYEA

Research Activities/Interests

- Bibliographic Studies.
- Ephemera Studies (Philately and Numismatics).
- Pictorial and Oral Information/Librarianship.
- Researching for and Coordinating Exhibitions.
- Encouraging Institutions (Especially Churches) to Build and Maintain Archives.



Korklu A. Laryea
Ag. Librarian

Conferences/Workshops/Seminars

- Participant, WACREN Conference, Beyond Networks: Applications and Services, 14th- 15th March, 2019, Accra.
- Participant, LIBSENSE Workshop, Accra, 11th - 12th March, 2019.
- Resource Person, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQUA in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018..
- Presenter, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.
- Presenter, 3rd CARLIGH-AAU International Conference on "Managing Research Outputs for National Development: Trends and Issues", AAU Secretariat, Legon, Ghana, 9th - 13th July, 2018.
- Presenter, International Conference on "Christianity in the Public Sphere in Africa and Asia", Andrew Walls Centre for the Study of African and Asian Christianity, Liverpool Hope University, Liverpool, 1st - 3rd July, 2018.
- Participant, Yale-Edinburgh Group on the History of the Missionary Movement and World Christianity, Scripture, Prayer and Worship in the History of Missions and World Christianity, New College, University of Edinburgh, 28th - 30th June, 2018.

Outreach Programmes/Extension Services

- Adjunct lecturer, Akrofi-Christaller Institute of Theology, Mission and Culture, Akropong-Akuapem.
- Secretary, Governing Council, Consortium of Research and Academic Libraries in Ghana (CARLIGH).
- Member, Planning Committee, 3rd CARLIGH/AAU International Conference, 2018.
- Coordinator, Exhibition on the Centenary Celebration of the Synod of the Presbyterian Church of Ghana, 18th - 23rd August, 2018.
- Coordinator, establishment of the library of the Nursing and Midwifery Training College, Tarkwa, April, 2018.

MR PETER ANAFO

Research Activities/Interests

- Information Literacy.
- Emerging Technologies in Libraries.
- Institutional Repository and Open Access.
- Electronic Resources

Conferences/Workshops/Seminars

- Participant, Workshop on EBSCO/IEEE Products, The Balme Library, University of Ghana, Legon, Ghana, 30th April, 2019.
- Presenter, University of Pretoria and the Carnegie Corporation of New York Capstone Conference, Pretoria, 24th- 30th March, 2019.
- Participant, Elsevier Training Workshop for Librarians/Academics of CARLIGH Members Institutions, Consortium of Academic and Research Libraries in Ghana (CARLIGH), University of Ghana, Legon, Ghana, 7th August, 2018.

MS GLORIA POMFOWAA

Research Activities/Interests

- Reference Service Management.
- Managing of User Expectation.

Conferences/Workshops/Seminars

- Participant, Workshop on Open Access, Open Data and Open Science for Librarians, College of Science Library, KNUST, Kumasi, Ghana, 14th - 15th March, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.

MR YAW OFORI

Research Activities/Interests

- Information Provision for Employee Safety in Mining Companies.
- Awareness Creation for Effective Use of Library in Secondary Schools.
- Collection Development.

Conferences/Workshops/Seminars

- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, Electronic Resources for Teaching and Learning Seminar for Convocation organised by PQAU in Collaboration with the University Library, UMaT, Tarkwa, Ghana, 13th September, 2018.

Outreach Programmes/Extension Services

- Senior Tutor, College of Distance Education, University of Cape Coast, Cape Coast, Ghana.

LIBRARY STAFF

Details of staff of the University Library are given in Tables 44 and 45.

Table 44 Senior Members of the University Library

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Ms Korklu A Laryea	MPhil (Ghana), MA (UCL), PGDL (Ghana), BEd., Dip. Arts (Cape Coast)	Ag. University/Deputy Librarian	African Studies, Information Studies, Information Literacy
Mr Peter Anafo	MA, BA, Dip. (Ghana),	Senior Assistant Librarian	Information Literacy, Institutional Repositories, Open Access
Ms Gloria Pomfowaa	MA (Ghana), , BA (KNUST)	Assistant Librarian	Managing Library Users' Expectation, Reference Service Management.
Mr Yaw Ofori	MA, BA, Dip. (Ghana),	Assistant Librarian	Classification, Collection Development, Serials Control

Table 45 Other Staff of the University Library

Name	Academic/Professional Qualification	Designation
Ms Grace Donkor	Dip (Ghana)	Chief Library Assistant
Mrs Patience Aba Buah	BA (Ghana)	Principal Library Assistant
Ms Abigail E Tadmie	Dip (Ghana)	Principal Library Assistant
Ms Augustina Edzii	GCE "O" Level	Senior Library Assistant
Ms Cecilia Baffoe	WASSCE	Junior Library Assistant II

UNIVERSITY CLINIC

INTRODUCTION

The University Clinic provides health care to the staff of the University, their dependants, students, pupils of the Basic School and the communities around the university. The University Clinic has undergone tremendous progress in terms of facilities and service to clients. It has an emergency unit, mini-lab, OPD, a consulting room, male and female ward, a dispensary and records office.

The Clinic is headed by a Principal Physician Assistant and supervised by a Medical Consultant on part-time basis.

ACTIVITIES

During the year under review, the Clinic undertook the following activities.

Annual Medical Screening

The entire staff of the University was screened for hypertension, diabetes and Body Mass Index (BMI). Through this exercise, some staff were newly diagnosed as hypertensive and/or diabetic and many were overweight.

Medical Examination

The Clinic organised medical examination for the first-year students of the University. This was done to ensure that the University admits only medically fit applicants.

Output

- The Clinic has accreditation from the National Health Insurance Authority. As a result, total patients' attendance has increased tremendously.
- The Clinic has a mini- laboratory where laboratory investigations such as Rapid Diagnostic Test (RDT- Malaria), Fasting Blood Sugar (FBS), urine routine examination, urine pregnancy test, Hepatitis B Surface Antigen and Blood Grouping are done.
- The University Clinic has an emergency unit with equipment such as oxygen, cordless pulse oximeter, resuscitation kits, suction machine, nebulizer, nasal prongs etc. The Clinic also has a wheel chair to take care of unambulatory patients. With these equipment, the emergency unit is able to take care of cases such as asthmatic attacks, shock, unconsciousness and other conditions that may need emergency response. Suturing of injured patients is also done at the Clinic.

CLINIC STAFF

Details of Staff of the University Clinic are given in Table 46.

Table 46 Clinic staff

Name	Designation and Current Position
Dr T. Kwarteng	Medical Consultant
Mr E. K. Sey	Principal Physician Assistant (Head, Clinic)
Mr P. O. Mensah	Senior Dispensing Technician
Ms Naomi G. Etonam	Senior Staff Nurse
Ms Jennifer Owusu	Senior Staff Nurse
Ms Cindy D. Arthur	Enrolled Nurse
Mrs Augustina Kuma	Ward Assistant
Ms Comfort Bukari	Ward Assistant



Mr Ebenezer K. Sey
Head

AUDIO VISUAL UNIT

INTRODUCTION

The Audio Visual Unit (AVU) was established as a photo-processing laboratory in 1985 by GTZ to meet the printing and photo laboratory requirements of the University community. The primary objective of the Unit is to provide the highest quality products and services of the University and to respond fully to the changing needs of the printing enterprise in order to effectively satisfy the needs of clients in the University.

In recent times, the Unit has expanded considerably and is now responsible for over 80% of the University's documentation and publications. The Unit undertakes all the printing requirements of all Departments and Units of the University. These include the processing and printing of admission brochures, teaching and learning materials of the teaching staff, examination materials, publications like the University Recorders, Statutes, Journals and publicity of the University in the areas of video documentation, educational exhibitions and mementos.

ACTIVITIES OF STAFF

MR KWAMINA KUREFI EDONU

Research Activities/Interests

- Drawing and Illustration.
- Photography.
- Design

Recent Publication

- Andoh-Robertson, T., Kwofie, P. S., Yeboah, P. Y. A. and **Edonu, K. K.** (2019), "Attitudes of Students Towards Seeking Counselling Services, the Case of University of Mines and Technology, Tarkwa, Ghana", *The International Journal of Humanities and Social Studies*, Vol. 12, No. 4, pp. 49 - 57.

Conferences/Workshops/Seminars

- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQAU in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQAU, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.



Kwamina K. Edonu
Head

AVU STAFF

Details of staff of the AVU Unit are given in Table 47.

Table 47 AVU staff

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr K. K. Edonu	MComm. Design, BFA (KNUST)	Assistant Registrar and Head, Audio Visual Unit	Drawing and Illustration, Photography, Design
Mr K. A. Dankwa	BA (KNUST)	Senior Designer	Videography, Sound Editing, Photography and Design

INFORMATION AND COMMUNICATION TECHNOLOGY UNIT

INTRODUCTION

The Information Communication and Technology (ICT) Unit was set up by the University to add value to the academic work and enhance the day to day administration of the University. The Unit provides technical advice and support on information systems to the lecturers and students in the area of teaching and learning. It also provides service to non-academic staff in the areas of processing and accessing information. The Unit manages the Local Area Network (LAN) and the wireless technology on the University campus.

PROJECTS UNDERTAKEN BY THE UNIT

The Unit has provided a number of network infrastructural projects for the effective operations of the information systems used in the University. The Unit continues to serve the University by providing reliable and efficient information technology for effective teaching and learning for students and staff. The Unit's Fibre project on replacing point to point radios and CAT 6 cables technology between the Network Operation Centre (NOC) and Faculties, Departments and other facilities in the University is ongoing. Two Halls of residence (Dr Kofi Tetteh Kofi and Chambers of Mines Halls), the Mechanical and Electrical and Electronic Engineering Departments were connected to the NOC via fibre technology and they are yet to pass traffic. The Faculty of Integrated Management Science (FIMS) was connected via fibre and is passing traffic. The Unit has also connected the Department of Petroleum Engineering via fibre Technology with no traffic passing.

The Unit has executed the Local Area Network (LAN) and WiFi infrastructure at the Main Auditorium in the University. The Estate and Audit Units in the Main Auditorium are accessing internet service. The Unit also extended live coverage technology for University functions and academic programmes at the Main Auditorium to the Seminar Rooms.

STAFF DEVELOPMENT

In the course of the year, Management sponsored some personnel from the Unit to attend a number of training workshops and among them is the GARNET Campus Network Design and Operations organised by Ghana Academic and Research Network (GARNET) in collaboration with Network Start-up Resources Centre (NSRC) from the United State of America held at the Ghana Institute of Management and Public Administration (GIMPA), Accra. During the year under review, the ICT Unit engaged the Stores Unit, secretaries of various departments and faculties on the operations of automated requisition processes that are yet to be deployed at the University. The application is in the final stage of implementation.

ACTIVITIES OF STAFF

MR. EMMANUEL KWEKU ESHUN

Research Activities/Interests

- Computer Network Design and Engineering.
- Wireless Communication Relating to Wireless LAN and MAN Technologies.
- ICT Usage in Educational Institutions.



Mr Emmanuel K. Eshun
Head

Conferences/Workshops/Seminars

- Participant, WACREN Conference, Beyond Networks: Applications and Services, 14th- 15th March, 2019, Accra.
- Participant, University Intellectual Property Policy Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 2nd April, 2019.
- Participant, Data Ethics and Skills for Reproduction of Research Findings using Stata and the Use of Turnitin Application Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 22nd November, 2018.
- Participant, Grant Proposal Development Workshop for Convocation organised by PQUA in Collaboration with ORIC, UMaT, Tarkwa, Ghana, 17th - 18th October, 2018.
- Participant, Mentorship Role of Academic Tutors on Students' Academic and Psychological Wellbeing and Orderly Presentation of Investigative and Disciplinary Committee Reports Seminar for Convocation organised by PQUA, UMaT, Tarkwa, Ghana, 11th October, 2018.
- Participant, 5th UMaT Biennial International Mining and Mineral Conference on "Expanding the Frontiers of Mining Technology", UMaT, Tarkwa, Ghana, 1st - 4th August, 2018.

ICT STAFF

Details of staff of the ICT Unit are given in Table 48.

Table 48 Staff of the Unit

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Mr E. K. Eshun	MSc, MSc, BSc (KNUST)	Systems Analyst, Head ICT Unit	Computer Network Design and Engineering, Wireless Communication Relating to Wireless LAN and MAN Technologies, Solid Waste Management (Best Practices in Transporting Solid Waste)
Mr R. Mintah	Diploma (C & G Lond)	Senior Technician	Software, Networking, Hardware
Mr F. Ahiadome	BSc (UMaT)	Senior ICT Assistant	Software and Hardware
Mr B. O. Nyarko	HND (K'dua Poly)	ICT Assistant	Networking

DEVELOPMENT AND MAINTENANCE UNIT

INTRODUCTION

The Development and Maintenance Unit forms an integral part of the Central Administration and has the responsibility for the infrastructural development and maintenance of facilities and services for effective and efficient operations of the University. The Unit ensures the management of estates, electricity, water supply, planning and organising general environmental sanitation of the University. Waste management, control and general supervision of various food vendors' forms part of the responsibilities of the Unit.

ACTIVITIES OF STAFF

PAPA YAW ATTOBRAH

Research Activities/Interests

- Project Management.
- Sustainable Development.
- Contemporary Architecture.

Outreach Programmes/Extension Services

- Member, Ghana Institute of Architects, Chartered Management Institute (UK).



Papa Y. Attobrah
Head

DEVELOPMENT AND MAINTENANCE UNIT STAFF

Details of staff of the Development and Maintenance Unit are given in Table 49.

Table 49 Staff of the Development and Maintenance Unit

Name	Academic/Professional Qualification	Designation	Areas of specialisation
Papa Yaw Attobrah	PgD Arch, BSc. Arch. (KNUST), AGIA,	Senior Architect	Project Management, Sustainable Development, Contemporary Architecture
Mr M. Attah	BSc (KNUST)	Senior Assistant Clerk of Works	Highway Engineering, Structural Engineering
Mr R. Amoah	Adv. Cert. (C & G Lond)	Ag. Estate Officer	Estate Management, Project Management
Mr F. Hagan	C & G (Lond)	Principal Technician	Electrical Systems
Mr C. Mensah	Adv. Cert.	Senior Technician	Painting, Sign Writing
Mr J. B. Koomson	NVTI Part I and II (TTI)	Senior Technician	Refrigeration and Air Condition, Basic Electricals
Mr A. Antwi-Gyan	NVTI Part I and II (TTI)	Senior Technician	Process Electrical Instrumentation, Commercial Wiring, Refrigeration and Air Condition, Telephone Communication,
Mr J. B. Djan	NVTI Part I and II (TTI)	Works Superintendent	Plumbing and Pumps

DYNAMITE FM

INTRODUCTION

Dynamite FM (88.9 MHz) was established with the aim of improving the channels of communication to enhance the education and provision of entertainment for the staff and students of the University and its immediate community. The station is the pioneer radio station and one of the preferred radio stations in the Municipality.

During the year under review, the radio station provided services including religious broadcasts, funeral announcements, social announcements and talk shows, student broadcasts, news and sports broadcasts for the benefit of the University Community and the Municipality.



Mr Paul Y. A. Attobrah
Ag. General manager

DYNAMITE FM STAFF

Details of staff of Dynamite FM are given in Table 50.

Table 50 Dynamite FM Staff

Name	Academic/Professional Qualification	Designation
Mr P. Y. A. Yeboah	MSc, BA (KNUST), MBA (Milan), MIPR	Assistant Registrar, University Relations Office and Acting General Manager
Mr H. A. Afrifa*	Diploma (KNUST)	Principal Technician
Mr N. Mensah	Cert Ed (UEW), C & G (Lond)	Senior Technician
Mr S. Y. Mensah	BA (AUCC)	Senior Technician
Mr S. Boham	C & G (Lond)	Technician
Mr W. Opoku	GES Craft Practice	Assistant Technician

* On Secondment

OFFICE OF THE DEAN OF STUDENTS

INTRODUCTION

The office of the Dean of Students (DoS) is responsible for the welfare and discipline of all students and gives meaning to the role of Senior Members as acting in *loco parentis* for students. The office works in close collaboration with the Students Affairs Section of the Registry and Students' Representative Council (SRC) to ensure the general welfare of the students. In addition, it collaborates with the Hall Council to manage both Residential and Non-Residential facilities in the University.



Assoc Prof
B. Kumi-Boateng
Dean of Students

STAFF

Assoc Prof B. Kumi-Boateng	- Dean
Dr E. Kokroko	- Senior Hall Tutor, Gold Refinery Hall
Dr J. J. K. Gordon	- Senior Hall Tutor, Dr Michael Tetteh Kofi (KT) Hall
Dr E. N. Wiah	- Senior Hall Tutor, Chamber of Mines Hall
Mrs R. Kizzie-Hayford	- Student Affairs Unit
Mr F. O. Adu Twum	- Hall Bursar
Ms Millicent Eduafo	- Principal Administrative Assistant

ACTIVITIES

In the year under review the Office of DoS' activities are reported in the following:

- Student Identity Cards: The Office has purchased an ID card printer and together with the Audio Visual Unit set up a section to now provide students ID cards on time.
- Fumigation: The office fumigated all the three Halls against cockroaches, bed bugs, flies, termites, mice and has also initiated a monthly fumigation against snakes.
- Rehabilitation at the Halls: The Hall Council has undertaken some rehabilitation works (rewiring, painting, replacement of nets and shower curtains etc.) at the three Halls of Residence to give it a face lift.
- Desilting of River Bediebewo: The Office together with the Maintenance Unit engaged the Prisons to desilt the river in front of the Halls to prevent flooding.
- Construction of Foot bridge: The Office has initiated a process to construct footbridge across the river in front of the Halls. The foot bridge when constructed will connect the Halls to the Auditorium to enable students to avoid the use of the main road.
- Workshops/Seminars: The office in collaboration with the University Training Unit and Guidance and Counselling Unit organised the following seminars or workshops/fair for the general student body: Innovation and Career Fair, Time Management Seminar for Students, The Mentorship Role of Academic Tutors on Students' Psycho-Social Wellbeing, Stress and Burnout Management seminar for Senior and Junior Staff, Orientation for Newly Appointed Staff of the University: The Role of Staff on Students' Psychological Wellbeing.
- Fresh Students Orientation, 2018/2019: The Office in collaboration with the Registrar's Office organised an orientation programme for all Fresh Students over a period of one week. The purpose was to inform students the about life on campus, facilities available in the University and usher them into real university life. It was also to make them aware of their privileges, rights and responsibilities. The students were accordingly advised by the Vice Chancellor to take their academic work seriously.
- Scholarships for Students: The Office in collaboration with the Guidance and Counselling Unit secured a total of 231 scholarships from GNPC (193), Barclays Bank (20), Total Petroleum (7), MTN (5) and CAMFED (6) for needy but brilliant students of the University.

STUDENT ENROLMENT IN HALLS OF RESIDENCE

During the year under review the Hall accommodated a total of 1 168 out of the 2 416 students representing 48%. As part of the University's strategy to encourage female students, 62% (282 out of 455) of the female students were given accommodation in the three halls of residence. The details of undergraduate student enrolment in the Halls are shown in Table 51.

Table 42 Student Enrolment in the Halls by Gender and Facilities 2018/2019

REQUIREMENTS	HALLS												
	GENDER	CHAMBERS OF MINES			GOLD REFINERY HALL			DR MICHAEL TETTEH KOFI			GRAND TOTAL		
		RESIDENTS	NON-RESIDENTS	TOTAL	RESIDENTS	NON-RESIDENTS	TOTAL	RESIDENTS	NON-RESIDENTS	TOTAL	RESIDENTS	NON-RESIDENTS	TOTAL
NO. OF STUDENTS	M	296	433	729	180	391	571	410	63	473	886	887	1773
	F	89	60	149	46	52	98	147	32	179	282	144	426
	T	385	493	878	226	443	669	557	95	652	1168	1031	2199
NO.OF ROOMS			200			60			242				502
NO.OF TOILETS			36			14			121				171
NO.OF SHOWERS			24			13			121				158
NO.OF FLOORS			8			4			4				16
NO. OF KITCHENETTES			5			4			8				17
FIRE EXTINGUISHERS			25			6			98				129

HALLS OF RESIDENCE

INTRODUCTION

There are three main halls of residence at the University. Each of the halls is administered by a Hall Council consisting of Senior and Junior members. The executive head of the Hall is the Dean of Students who is assisted by an Assistant Registrar who handles the Student Affairs Unit and a Senior Hall Tutor. There is also a Senior Administrative Assistant, Hall Bursar and other supporting staff. Eleven (11) Private Hostels are available around the campus and in Tarkwa town for students who, as a result of limited residential facilities, cannot be admitted as residential students. Currently about 52% of the total student population is non-resident.

CHAMBER OF MINES HALL

This Hall was named after the Chamber of Mines in recognition of the major role played by the Chamber in establishing the then Tarkwa School of Mines. The Hall provides accommodation for 385 students and is managed by a Senior Hall Tutor, 5 Hall Assistants, 10 Sanitary Labourers and 2 Artisans. The following are major activities undertaken during the year under review:

- Provision of mechanised borehole for both blocks;
- Replacement of nets and shower curtains in the wash rooms;
- Fumigation of rooms;
- Provision of locks for all balcony doors; and
- Provision of orbital wall fans for all rooms.

GOLD REFINERY HALL

This Hall was named after the abandoned Gold Refinery building which was rehabilitated and turned into a hall of residence for first year students. The Hall provides accommodation for 226 students and is managed by a Senior Hall Tutor, 5 Hall Assistants, 8 Sanitary Labourers and 1 Pump Attendant. The following are the major activities undertaken during the year under review:

- Repainting of the Study Rooms;
- Fumigation of rooms; and
- Provision of a well-furnished Office for the Senior Tutor.

DR MICHAEL TETTEH KOFI (KT) HALL

This Hall was named after Dr Michael Tetteh Kofi, a past principal of this institution in recognition of the major role he played towards the development of the University. The Hall provides accommodation for 557 students and is managed by a Senior Hall Tutor, 4 Hall Assistants and 10 Sanitary Labourers. The following are the major activities undertaken during the year under review:

- Fixing of attendance electronic system for workers;
- Fixing of CCTV bulb on the floors to enhance security;
- Fumigating of the rooms;
- Repainting of the rooms and doors;
- Purchasing of new bed sheet for international students;
- Repainting of the interior of the hall; and
- Hosting of over 500 small-scale miners during the third and fourth phases of the Sustainable Small-Scale Mining Training Programme at UMaT.

STUDENTS COUNSELLING SERVICES

There is a Guidance and Counselling Unit under the office of the Registrar that collaborates with the Office of the Dean of Students. The office is located on the first floor of the KT Hall and normally works from 8.00 am to 5.00 pm from Monday to Friday. However, in emergency cases, the unit works 24 hours a day and is headed by a professional Counsellor. The Unit aims at helping or assisting students to address personal or emotional challenges that may affect them during their stay at the University. The Unit offered the following services during the year under review:

- Individual Counselling.
- Academic Counselling.
- Career Guidance and Counselling.
- Study Clinics.
- Work/Home Stress Management.

HEALTH CARE

The University Health Services comprises a clinic on campus and any National Health Insurance Scheme (NHIS) accredited hospital. The clinic has a Principal Physician Assistant, nurses and a part-time Medical Doctor. Most students have been registered with the NHIS but the office supports students who have special health issues that are not covered by the NHIS. However, during the year under review, there were no such health issues.

STUDENT AFFAIRS

The Student Affairs Unit promotes and supports student learning and is responsible for the quality of student life on campus. The Unit helps students to overcome obstacles that may impede their ability to have a successful and enjoyable student experience. The Unit provides opportunities to make a successful transition to and through the University environment. It also provides appropriate information, guidance and support to students to create a healthy and conducive environment. The Unit aims at providing intellectual, social, physical and professional development to our students through the provision of responsive and accessible services in a caring manner. The office is located on the ground floor of the Central Administration and works from 8.00 am to 5.00 pm from Monday to Friday.

