UNIVERSITY *of* CAPE COAST

60
1962-2022

DIRECTORATE OF RESEARCH, INNOVATION AND CONSULTANCY

RESEARCH AGENDA

2023 - 2027

THEME:

Transdisciplinary Research and Innovation for Sustainable Development in a Changing World

Cont

ents

This is the third time a research agenda has been developed for the University of Cape Coast under the Directorate of Research, Innovation and Consultancy (DRIC). DRIC is convinced that research, as a result of scholarly activity, should not be the final objective of intellectual processes but rather a component of the never-ending cycle of innovation to meet societal requirements.

For 60 years, research at the University of Cape Coast has transformed Ghana and West Africa. Our ground-breaking innovations have earned us national and international reputation for the quality of our research. Our scholarly work improves health, solves complex global challenges and empowers stakeholder communities. Our status as Ghana and West Africa's number one University and the number one University globally in terms of research impact based on the 2022 Times Higher Education World University Rankings express these credentials.

Research and education (teaching and learning) are interconnected at UCC. As working environments transform, UCC's curriculum and programmes must evolve to support our students in navigating an increasingly complex world. Consequently, creativity, critical thinking, enterprise, intercultural competence and digital literacy are increasingly taking centre stage in our curriculum. The most pressing contemporary global challenges facing the world today are both social and natural, and our multidisciplinary approach places us in a unique position to develop and implement sustainable solutions. The current research agenda reinforces interdisciplinary collaboration and academia-industry partnerships, both of which have immense potential to incentivise innovation.

Fostering collaboration among academic institutions and national and international research agencies, civil society, industry, the private sector, government and communities (i.e., quintuple helix innovation) is essential to realising UCC's research mission to impact society positively. DRIC considers

the societal impact a four-part process: publication, community outreach, policy creation, and commercialization. Each of these processes is driven by a critical mass of competent human resources. If the University succeeds in establishing a presence in those four areas, it will be successful in offering effective instruction, creation and dissemination of valuable information. How communities, industry, and government use our research discoveries to improve people's lives could be a metric of success.

The number of publications by University faculty researchers in the Thomson Reuters and SCOPUS-indexed journals has increased dramatically during the last five years. As a result, the number of academic researchers publishing in these databases has grown. This success could be partly attributed to the University's clear policy on publishing in peer-reviewed journals of international repute and an attractive incentive scheme for publication (addendum to travel grants and conference support). Since this approach has proven effective, the University should now strive to improve its publication performance by instituting a rigorous but more rewarding publication incentive programme. Such a programme would encourage UCC academics to publish in high-impact journals, ensuring that our research findings are widely disseminated and cited. In this context, the evidence synthesis themes of local, national, regional, and global importance identified by the research agenda committee are critical to achieving this essential goal of global visibility.

Findings from various university research initiatives are also presented and shared with the local government to assist in policy creation and decision-making to promote good governance. However, a full-fledged partnership between UCC and the local government has yet to materialise. UCC envisions itself as the foremost institution to be consulted by decentralised government agencies for advice on policy decisions. When backed up by scientific facts, which the University could give, better solutions can be reached.

The commercialisation of intellectual property (IP), which research is an integral part of, is relatively recent in UCC. DRIC has promptly responded to this need by creating the intellectual property unit and by establishing an

IP policy for the University. Obtaining IP protection for research products and commercialising the University's IPs are complex challenges that require higher level management support.

We must venture into uncharted waters as we strive to maintain our academic reputation on the continent. We must start recruiting the best talent in AI, Blockchain, Machine Learning, Edge of Things and Quantum Computing. It is only then that future editions of the research agenda will reflect these 21st century ground-breaking scholarly domains. We must also cultivate a performance culture and create a progressive environment where people are empowered to thrive.

I want to express my most profound gratitude to the UCC Research Agenda Committee members led by Prof. David Teye Doku. The team have created a research agenda that speaks to our diverse constituencies, core values, and long-term goal of being a globally recognised University known for outstanding teaching, outreach, research and professional development.

Professor Frederick Ato Armah
Director, Directorate of Research, Innovation and Consultancy (DRIC)

ACKNOWLEDGEMENTS

This Research Agenda was put together through the collective efforts of all colleges, faculties, schools, departments and centres of the University of Cape Coast.

Special thanks go to the 2023-2027 Research Agenda Committee.

Members of the Committee are:
- Prof. David Teye Doku   -   Chair
- Prof. Ernest Ekow Abano
- Prof. Desmond Omane Acheampong
- Prof. Issahaku Adam
- Prof. Hope Pius Nudzor
- Prof. Angela Dziedzom Akorsu
- Dr. Enoch Thaddaeus Quayson
- Dr. Brandford Bervell
- Mr. Alfred Ghartey   -   Member/Secretary

Co-opted member
- Dr. Alex Boadi Dankyi

We also acknowledge the efforts of all representatives from the Schools/Faculties who assisted the Committee in their work as focal persons during the data gathering.

We are very grateful to Prof. Francis Enu-Kwesi and Prof. Michael Adu for reviewing the Research Agenda.

Freepik.com and vecteezy.com are duly acknowleged for some vector images used in this document.

Graphic Designers
Mr. Ebenezer Fiifi Wiabo Wie-Addo
Mr. Alfred Ghartey

INTRODUCTION

The University of Cape Coast (UCC) has been committed to the achievement of scholarship and innovation for the past 60 years. This commitment, is expressed in its vision to be a university with a worldwide acclaim that is strongly positioned for innovative teaching, research, outreach and professional development. The University's commitment to research and innovation was renewed in 2018, expressed in, and driven by a five-year research agenda (2018-2022). The results of the 2022 Times Higher Education World Universities Rankings, which places the University as the topmost ranked University in Ghana and West Africa, 4th in Africa, among the top 350 universities globally, and 1st in research influence globally, is a reflection of our achievements in scholarship so far.

Despite the outstanding performance of the University of Cape Coast in executing the 2018-2022 Research Agenda, the need to revise its content cannot be over-emphasised. Firstly, we recognise that the fullest potential of the 2018-2022 Agenda could not be realised due to a number of logistical and operational challenges, as well as the unexpected effect of the COVIID-19 pandemic on our research funding sources and research activities. Thus, persistent issues such as climate change and food security remain and require continuous attention. Secondly, contemporary and emerging issues such as digital transformations, artificial intelligence and COVID-19, have come along with complexities that require transdisciplinary approaches and concerted efforts involving academia, industry, government and civil society. Thirdly, the need to continuously improve to reinforce our world-acclaimed position as a research-intensive university, makes it imperative to rethink our research agenda.

The 2023-2027 Research Agenda, which is under the theme *Transdisciplinary Research and Innovation for Sustainable Development in a Changing World,* provides the roadmap for research that transcends traditional disciplinary boundaries and integrates the disciplines of

education, humanities, natural, social, and health sciences. As a constellation of a diverse individual and team-based research portfolio from departments, faculties/schools and colleges of our University, this Agenda is inherently owned by our entire research community due to its bottom-up development procedures. The Agenda also aims to guide research, using novel ideas and processes to produce new and original outputs for societal benefit. Further, the 2023-2027 Research Agenda is situated within national (e.g. Ghana Centennial Development Plan, NDPC Agenda 2057), continental (e.g. Agenda 2063, the Africa we want) and global development agenda (e.g. the Sustainable Development Goals (SDGs)).

This renewed research agenda seeks to build on our unique strengths and opportunities, as well as confront our unique weaknesses and threats. It is a strategic framework for guiding improvements in the development, conduct and governance of our research and innovation drive. It will also ensure that the University of Cape Coast continues to be positioned among the best research-intensive universities nationally, regionally and globally.

Prof. David Teye Doku
Chair, 2023 - 2027 Research Agenda Committee

INAUGURAL ENTRY OF UCC
IN THE TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS

-- UNIQUE ACHIEVEMENTS AND HIGHLIGHTS --

THE WORLD UNIVERSITY RANKINGS 2022 **TOP 350**

THE WORLD UNIVERSITY RANKINGS 2022

UNIVERSITY OF CAPE COAST
CAPE VARS · UNIVERSITY OF COMPETITIVE CHOICE

1st — No. 1 University in Ghana — Ghana

1st — No. 1 University in West Africa — West Africa

Top 5 — Among the Top 5 Universities in Africa — Africa

1st — No. 1 University globally for research influence — Global

1st — No. 1 out of the 138 new entrant universities in the THE World University Rankings - 2022 — Global

Top 350 — Ranked among the TOP 350 Universities Globally

TIMES HIGHER EDUCATION EMERGING ECONOMIES UNIVERSITY RANKINGS

#1 in Ghana in the 2022 Times Higher Education Emerging Economies University Rankings

#1 in West Africa in the 2022 Times Higher Education Emerging Economies University Rankings

#4 in Africa in the 2022 Times Higher Education Emerging Economies University Rankings

#52 out of 698 Universities from 50 countries in the 2022 Times Higher Education Emerging Economies Rankings

2nd highest Ranked Debutant out of 104 universities from 32 countries in the 2022 Times Higher Education Emerging Economies Rankings

TOP 100 UCC is the only university in West Africa in the top 100 in the 2022 Times Higher Education **Emerging Economies** University Ranking

UNIVERSITY OF CAPE COAST
CAPE VARS · UNIVERSITY OF COMPETITIVE CHOICE

KEY RESEARCH

FOCUS AREAS

The 2023-2027 Research Agenda is hinged on six key strategic research areas. These are: Empowering and Transforming Society; Health in a Changing Society; Science and Technology Applications to Emerging Challenges; Responsive Distance Education; Transformative Education in the 21st Century; and Evidence Syntheses for Policy and Practice. Although the six thematic areas were developed based on the research interests from the Colleges, the Agenda is intended to promote transdisciplinary research and innovation across the entire university. The subsequent sections present highlights of the six key research focus areas.

Empowering and Transforming Society

This theme is fundamental to the research excellence of, but not exclusive to, our College of Humanities and Legal Studies. The empowerment and transformative emphasis allude to the need for research that ultimately enhances a degree of autonomy and self-determination in people and communities in ways that enable them to represent their interests, claim their rights, and positively alter their circumstances. It embraces the philosophical foundations that underpin human experiences and drive public policy for sustainable development. Issues of interests include: (1) the role and functions of organisations, market and non-market economies; (2) equity, rights and social justice and (3) history, creativity and languages that mark human identities. Examples of specific issues identified for attention are: digitalisation and the future of work, migration, health, environment, governance, peace and conflict, gender and tourism. Research within this theme is consistent with the National and Regional Development Agenda (e.g. Ghana Continental Development Plan, NDPC Agenda 2057 and Agenda 2063, the Africa we want). It also aligns with, and contests most of the UN's Sustainable Development Goals, notably, SDG 1, 3, 5, 8 and 10.

Health in a Changing Society

The revolution of science and technology in the 21st century has impacted health and general well-being of people. Sedentary lifestyle; abuse of drugs and self-medication; consumption of poor-quality diet; and environmental degradation and pollution are currently among the major public health challenges. These issues are linked to: higher risk of obesity; depression; digestive disorders; heart disease and stroke; diabetes; organ dysfunction and failure; cancer; emerging and re-emerging of infectious diseases; and treatment failure among other 21st century health issues. These health concerns emanating from complex societal changes require sustainable interventions through well-tailored transdisciplinary research and innovation. Hence, our research focus will include diagnosis, treatment, management and prevention of diseases. We will also explore the affordance of technology to inform policy and decision making and improve health and well-being. This research focus is in line with the Health Professions Regulatory Bodies Act (ACT 857) of Ghana; the Ghana Health Services and Teaching Hospitals Act (ACT 525); the Mental Health Act (ACT 846) and SDG 3,4,6 and 7.

Responsive Distance Education

Current trends in distance education show a shift in focus, pedagogical approaches and theoretical frameworks. Lately, learner interaction, accessibility, equity, quality, innovation, and customer satisfaction are central to distance education. Therefore, this research focus addresses the following: equitable access to tertiary education; technological innovation in teaching; quality issues in distance education; as well as students' support services and satisfaction. The research focus thus resonates with important distance education policies and regulations namely the: International Council for Distance Education (ICDE) policy 2015; Ghana ICT4 AD policy 2; ICDE policy recommendation 4); Sustainable Development Goals (SDGs 4 target 3 and 5); African Council for Distance Education (ACDE) and Ghana National Education Strategic Plan-ESP (2018-2030, principle 1); ACDE (2010–2014) programme 2; (SDG 4; ESP 2018-2030 principle 2, ICDE 2013 Policy Recommendations 1, 2 and 3).

Science and Technology Applications to Emerging Challenges

Society is constantly beset with new challenges that need to be addressed raptly. However, much of the solutions seem to be embedded in science and technology. This makes the application of science and technology in solving contemporary challenges such as climate change, food fraud, food security and environmental pollution imminent. Therefore, this research theme focuses on using data science; technology and artificial intelligence in a transdisciplinary fashion to address the challenges of food production, processing and preservation; environmental and health modelling and simulation; and bio-resource utilisation for healthy life. Additional areas that will be explored include drug development, conservation, coastal geomorphology and engineering, environment and the blue economy. This theme is consistent with the mission and vision of the University, national, regional and global developmental agenda (e.g. Ghana Centennial Development Plan, NDPC Agenda 2057) and SDGs 1,2,3,11,12 and 13.

Transformative Education in the 21st Century

The 21st century education systems aim at inculcating in learners, relevant skills and competencies (Critical Thinking, Creativity, Collaboration and Communication) to make them fit well in a rapidly changing world. In line with this, the meaning of quality education as enshrined in Ghana's National Council for Curriculum and Assessment (NaCCA) policy implies that education should produce graduates to support and help drive the national and accelerated development agenda and fit into international society. Transformative education connotes an education that is relevant and responsive to individual, community and national developmental needs. These have implications on how curriculum should be developed, taught and assessed in Ghanaian schools. Against this background, teacher education, curriculum reform and innovation, quality education, policy-making, implementation and evaluation warrant current research. The above are in tandem with the SDG 4 and Educational Strategic Plan (Ghana) 2018-2030 principle 3.

Evidence Syntheses for Policy and Practice

Evidence synthesis enables researchers to systematically bring together all available pertinent research and information addressing specific research questions. This approach is critical in filling knowledge gaps, establishing evidence to inform policy decision-making and best practices. The University, therefore, seeks to initiate a new research drive towards building excellence in evidence synthesis. Essentially, this will enable us to focus on relevant research questions within our research foci, which are of national, regional and global importance, and for which there may be inconclusive evidence. This research theme will primarily use cutting-edge evidence synthesis tools such as systematic reviews, meta-analyses, fast evidence assessments and evidence gap maps, as well as upcoming innovations and advanced evidence synthesis tools. This theme will aid UCC's knowledge management and evidence translation efforts by combining data from numerous research to answer questions about which interventions work, why and how they work, and how to improve them. Synthesised evidence is critical to meeting the SDGs and will be fundamental in monitoring the target indicators of the SDGs to identify the body of lessons of what works, where and when; what actions will be most effective and cost-effective, given the constrained resources globally.

OUR STRATEGIC PRIORITIES

In seeking to operationalise our Research Agenda, we are guided by the following defining characteristics.

Transdisciplinary	We are dedicated to creating a body of intellectual frameworks beyond disciplinary boundaries in response to the complex and/or unconventional problems of a rapidly-changing world.
Innovation	We encourage a spirit of discovery and entrepreneurship by fostering university-industry-government-civil society synergy in our quest for knowledge.
Transformation	We are committed to research that offer alternatives to mainstream knowledge and advance sustainable solutions to societal problems.
Local relevance with global reach	We seek to be a responsible university by being balanced in our research drive. The University ensures that our research impact is specific to local context, while our research outputs deliver on the global knowledge economy.
Collaboration	We engage a blend of diverse expertise and experiences by nurturing research partnerships and networks beyond our University and Country, hinged on best practices.
Epistemic Justice	We promote inclusiveness and ethical behaviour in our research. Our University ensures that all individuals and diverse groups are included, represented and valued in knowledge production, processing, management and sharing.

OUR RESEARCH RESOURCE BASE

The following resources will enable us implement our research agenda.

Faculty

Our rich and diverse faculty comprises a blend of experienced and evolving researchers of national and international repute. This human resource base contributes to our local and global research influence. This will continue to contribute to the execution of our research agenda.

Graduate studies programmes

We have a thriving graduate school that continues to provide excellent and demand- driven support to graduate research in various disciplines. The school attracts local and international students who contribute to our research outputs.

The Sam Jonah Library

One of the key pillars that support our research is the multi-purpose Sam Jonah Library and our well-resourced specialised libraries. These provide learning and research spaces, support, books and periodicals, electronic databases and other resources for research and capacity building.

ICT Infrastructure

We have an available internet facility, with supporting staff that assist in providing services to our faculty. We also have two data management and archiving centres (Centre for Data Archiving, Management, Analysis and Advocacy-C-DAMAA and Data Science Unit) that provide data storage and management assistance to support research.

Our Laboratories

i. Science laboratories

TThe University has well-resourced laboratories for skills training, simulation studies and other research activities. The availability of the equipment and chemicals/reagents and other supplies assist in the design and execution of research. In addition, the Technology Village, the School farm and a vast off-campus arable land at Wamaso are available for teaching and research.

ii. Research Parks

There are also specific parks that are used by those in the life sciences. These include the on-campus Dimelow forest reserve, the Kakum National Park, about 30 km from the main campus of the University, Mole National Park in the Savannah Region and the Ankasa Conservation Area in south western Ghana.

iii. Social Laboratories

Our University is uniquely located within several towns and villages, allowing us to adopt surrounding communities for research and extension services. Through this, we can co-create knowledge with the communities for ownership and impact. Moreover, UCC's unique location, as a seafront university and in the centre of three agro-ecological zones (Coastal Savanna, Evergreen Rain forest and Semi-Deciduous rain forest), provides it with an exceptional opportunity to leverage the unique attributes of these ecologies and use them as natural laboratories for its research. The sea and each agro-ecology offer unique environments (including water, soil, landform and climatic characteristics) for climate change, marine, environmental and agricultural research.

Our Research, Innovation and Consultancy Directorate

Our Directorate of Research, Innovation and Consultancy (DRIC) is mandated to transform the University of Cape Coast into a leading research and innovation institution of world-wide acclaim. DRIC provides optimal and effective use of intellectual, financial and physical resources to foster an environment of research excellence in the University. The Directorate also provides research capacity building within the University. Furthermore, DRIC attracts research leaders in Ghana and beyond to collaborate with faculty to advance knowledge discovery and its translation into tangible benefits. Ultimately, DRIC is responsible for the design, implementation, monitoring and evaluation of this Research Agenda.

Centres of Excellence

Our world-class centres of excellence continue to provide state of the art facilities, infrastructure, human resource and services for cutting-edge research. For example, the Africa Centre of Excellence in Coastal Resilience (ACECoR) is a leader in demand-driven research to support coastal policy development in Africa and the Institute for Educational Planning and Administration (IEPA) UNESCO Category II Centre of Excellence for West Africa provides a progressive environment for conducting cutting-edge research, innovation and consultancy in education service delivery. Also, there is the AU Centre of Excellence at the Department of Fisheries and Aquatic Sciences. Together, these world-class Centres of Excellence will continue to provide state of the art facilities, infrastructure, human resources and services for front-line research and innovation.

MONITORING
AND EVALUATION

This section sets out the monitoring and evaluation framework for tracking implementation. The section also dictates the research outputs that will serve as the basis for judging the University's performance in the implementation of the Research Agenda. In this regard, this section outlines the key targets, outputs/deliverables, timelines, and the resources/interventions required to ensure a successful research agenda. Additionally, responsibilities are defined and assigned to critical officers who shall be tasked with monitoring the implementation of the Research Agenda and evaluating the progress and outputs associated with the performance.

Order of Reporting

We propose the following bottom-up reporting line;

The Director, DRIC

↑

Provost of Colleges

↑

Deans of Faculties and Schools

↑

Heads of Departments/Centres/Units

Resource implications for the Implementation of the Research Agenda

To successfully implement the Research Agenda, there is the need to provide and equip the Departments/Units with technical and financial support. The following are identified as some of the focal resources and support that need to be delivered to ensure the successful implementation of the Research Agenda.

Capacity building: There is the need for faculty's capacity across the various departments/units to be enhanced through workshops on grants-writing/seeking, project management, report writing, publication in reputable international peer-reviewed journals, knowledge exchange, media engagements and other related activities.

Provision of resources: The University must ensure the provision of convenient working space for faculty. This includes stable, and reliable internet connectivity, computers, printers, subscription and access to scholarly databases (Elsevier, Emerald, Taylor and Francis, Sage, etc.), subscription and access to software for analysing data, and functional laboratories for departments/units.

Research funding: The University through DRIC should increase the amount and coverage of funding available for research. Departments, Faculties/Schools and Colleges should have a line for research in their annual budget. In addition, since external funding will be critical for this Research Agenda, DRIC should reenergise its responsibility of locating new funding sources and assisting faculty, staff, and students with proposal preparation and submission. The University should review, negotiate, and execute all research contracts through DRIC. Also the role of DRIC as the institutional contact with external agencies and organisations on all research administration and contracts should be enforced to the latter. It will be necessary for DRIC to develop a framework that incentivise positive staff grant-seeking efforts.

Administrative support: The success of this Research Agenda will hinge on DRIC's ability to fulfil its administrative support function as a go-between for faculty and financing. For successful research management, DRIC should manage the funding, collaborating closely with other departments such as the Directorates of Human Resources, Finance, and Procurement to make projects run smoothly. Quick and less bureaucratic procurement procedures, assistance in the clearance of research equipment and tools, prompt contract signing, and compliance with funding agencies and University standards are critical to this research agenda. It will also hinge on unfettered support and commitment from top-level university management.

Suggested implementation activities and timelines

In order to ensure the successful implementation of the Research Agenda, it is imperative to provide a framework of activities and associated timelines to guide departments/units. Fundamentally, the research support grants by DRIC should be traceable to this Agenda. The activities listed below serve as an implementation guide to departments/units, faculties/schools and colleges.

Implementation activities and timelines

Activity	Responsibility	Timeline
Admit post-graduate students (MPhil & PhD) into departmental research themes	HoDs	Annually, starting 2023/2024 academic year
Institute research seminars at the faculty/school level for departments/units to present their research themes	Deans/HoDs	Starting 2023/2024 academic year
Compile and disseminate a list of journals for publications	DRIC Director	Update annually

Constitute an annual monitoring and evaluation committee on ad-hoc basis to review the progress of implementation of the research agenda	DRIC Director	Starting 2023/2024 academic year
Facilitate the forging of research collaborations within and outside of the University	DRIC Director	Starting 2023/2024 academic year
Departments/units to submit through faculties/schools and colleges to DRIC biannual progress reports	DRIC Director, Provosts, Deans and HoDs	Starting 2023/2024 academic year
Final evaluation of the research agenda	DRIC Director, Provosts, Deans and HoDs	Six months to the expiration of this research agenda
Final evaluation of the research agenda	DRIC Director, Provosts, Deans and HoDs	Six months to the expiration of this research agenda

Biannual reports

As part of tracking progress and taking remedial actions, departments/units will be required to submit biannual reports on the implementation of the Research Agenda. This will help the proposed ad-hoc committee to monitor and evaluate progress and challenges, and recommend remedial actions where necessary. In this regard, the form presented overleaf will be used for generating the biannual reports.

Monitoring Framework for UCC Research Agenda Implementation (2023-2027)

Research Title	Specific Research Activities	Thematic area within research agenda	Period of research	Current state of the research activity (Completed, ongoing)	Faculty members involved	Research/scho larly output (articles, policy briefs, product, grant proposal etc)	Funding sources		Remarks (e.g. SWOT)
							Self-Funding	Other (state the funder)	

RESEARCH AREAS OF
COLLEGES

Introduction

The College of Agriculture and Natural Sciences (CANS) is one of the five Colleges at the University of Cape Coast (UCC). It was instituted with four other colleges on Friday, 1st August 2014. The CANS comprises three schools: Agriculture, Biological and Physical Sciences. These schools offer multiple undergraduate and graduate programmes that seek to address the University's vision, mission and philosophy. The CANS sees the need to forge ahead strategically to support its three schools to achieve their objectives and further help the University achieve its vision and mission.

A strategic plan has been developed to serve as a tool to give direction and help realise its goals. The strategic plan of CANS addresses issues concerning teaching, research and extension services related to agricultural, biological and physical sciences. The college provides additional support to its schools to improve research output, establish collaborations and links with key local and international stakeholders, and generate revenue while maintaining fiscal discipline. All of these serve to further the University's aim of pushing its products to be more creative, innovative, and morally responsible.

The departments/centres/units are the schools are as follows:

School of Agriculture
- Department of Agricultural Economics and Extension
- Department of Agricultural Engineering
- Department of Animal Science
- Department of Crop Science
- Department of Soil Science
- Technology Village
- Meat Processing Unit
- Teaching and Research Farm

School of Biological Sciences
- Department of Biochemistry
- Department of Conservation Biology and Entomology
- Department of Environmental Science
- Department of Fisheries and Aquatic Sciences
- Department of Forensic Sciences
- Department of Molecular Biology and Biotechnology
- Centre for Coastal Management

School of Physical Sciences
- Department of Chemistry
- Department of Computer

Science and Information Technology
- Department of Laboratory Technology
- Department of Mathematics
- Department of Statistics
- Department of Physics
- Laser and Fibre Optics Centre

RESEARCH FOCI

School of Agriculture
- ICT applications, digitisation, and sustainable agribusiness models.
- Climate change, precision agriculture, sustainable crop and animal production.
- Engineering applications for food production, processing, agri-waste management and utilisation.
- Artificial intelligence in food production, processing, and quality assessment
- Animal breeding, nutrition, health, and animal-product quality
- Soil quality improvement, spatial assessment and soil fertility management
- Crop improvement, breeding, crop resource-use-efficiency, organic farming, controlled-environment production, and urban agriculture.

- Agricultural risk and insurance

Areas for Evidence Synthesis
- Agricultural risk and insurance
- Agricultural value chain
- Climate change issues
- Precision agriculture, machine learning and big data analysis
- Sustainable inclusive business models
- Deficit irrigation and food quality
- Electronic tongue, computer vision, and acoustic technology for measuring food quality and safety
- Food processing, food quality and safety
- Forage species and their effects on reproductive system development
- Meat quality evaluation
- Plant extracts and animal reproductive health

School of Biological Sciences
- Biomolecules and natural products characterisation, and medicinal and food bioresources for health
- Biodiversity and environmental conservation, and insects and products for feed and food
- Behavioural changes and sustainable waste management in coastal

areas, coastal and marine spatial planning, and coastal geomorphology
- Sustainable climate change adaptations strategies and environmental practices for health
- Breeding population dynamics, genetic characterisation and economics of fish, and cetacean and green energy studies
- Methodologies for digital, cyber and complex crimes
- Molecular and biotechnological tools for crop improvement and food, and diseases

Areas for Evidence Synthesis
- Computational biology about biological processes and ligand-receptor interactions
- Pathogen-plant interactions
- Fish population dynamics and fish value chain assessment
- Livelihood options within a coastal community context
- Climate change policy and impact assessment
- Energy policy
- Pollution and sustainable waste management
- Behavioural change issues in coastal areas of West Africa

- Approach to crop improvement
- Fermentation
- Pathogen-plant interactions
- Energy policy
- Pollution status
- Biodiversity
- Climate change policy
- Sustainable development goals implementation in Ghana
- Toxicology
- Forensic entomology
- Neuropsychology (emotional and mood related disorder)
- Investigative forensics (forensic entomology, fingerprinting and forensic toxicology)
- Forensic psychology
- Criminal psychology
- Court-victim/complainant experiences
- Cyber stalking, cyber harassment and adult mental health: a systematic review
- Pollution and sustainable waste management
- Climate change and disaster risk studies in West Africa
- Behavioural change issues in coastal areas of West Africa
- Development of eco-friendly methods for pest and vector

control

- Status and trends of pollinators across ecosystems
- Insects systematics across the country
- Computational biochemistry
- Salt iodisation and incidence of high blood pressure and related cardiac diseases among young adults
- Fish population dynamics
- Gene sequencing
- Fish value chain assessment
- Climate change impact assessment
- Livelihood options within a coastal community context

School of Physical Sciences

- Artificial intelligence and mathematical modelling for crop production, health and commerce
- Insurance claim modelling
- Food product development, processing and preservation
- Drug discovery
- Biomass/bioenergy
- Water resources engineering, environmental quality and remediation
- Computational, biomedical physics, and nanotechnology applications

Areas for Evidence Synthesis

- Impact of funding for water, sanitation and hygiene (WASH) under the sustainable development goals on other development outcomes
- Techniques for detecting extreme observations in multiple multivariate data
- Extensions of the vector auto-regressive model
- Effect of variance-covariance structure on applications of the multivariate multiple linear regression
- Change point detection and analysis in functional data
- Bayesian methods for fusing multi-physiological vital signs into a single variate vital sign
- Experimental optics and photonics
- Biophysics
- Medical physics
- Bio-lubricant
- Computational chemistry
- Drug design

COLLEGE OF HUMANITIES AND LEGAL STUDIES
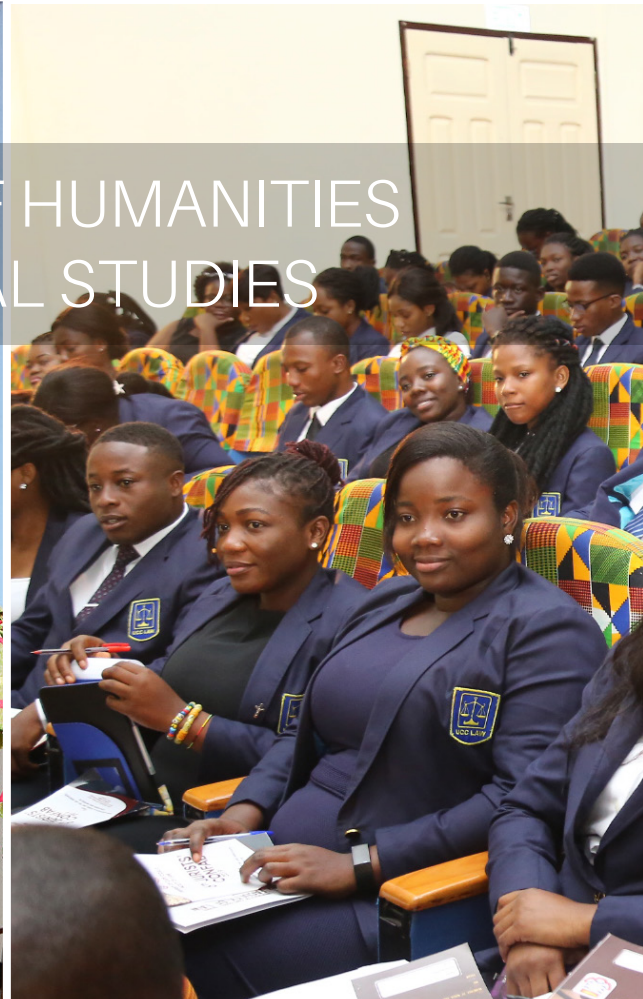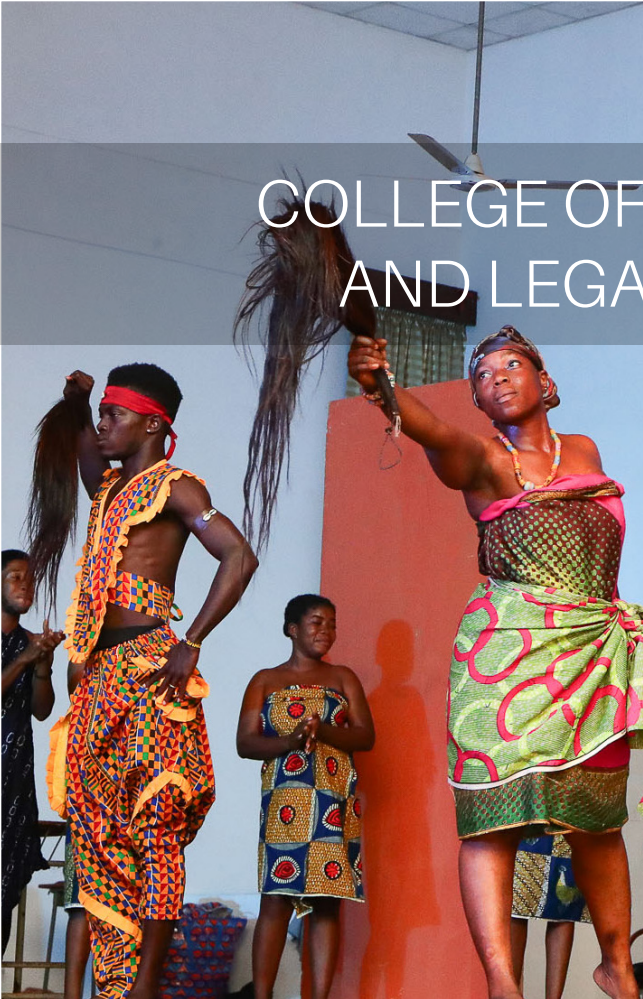
Introduction

The College of Humanities and Legal Studies (CHLS) comprises three Faculties and three Schools, with 28 departments, five centres, four institutes and one unit. The college is the second largest in the University in terms of staff and students numbers. The College has 28 departments, five centres, four institutes and one unit. Students enrolment for the 2017/18 academic year was approximately 37% of the total number of students (19,222) admitted into the University. There is a diversity of engagement and the potential to harness synergies among departments. The college is noted for its yearly organisation of a College Industry Week and Doctoral Summer School for Postgraduate students and young Faculty. CHLS is one of the leading colleges in the University in terms of research output. The College has critical research facilities and social laboratories to support research and innovation in its academic disciplines. CHLS has strategic collaborations for research and innovation with academic institutions, the private sector and Civil Society organizations both locally and internationally.

The Centres, Departments or Units of the various Faculties or Schools under the college are as follows:

Faculty of Arts
- Centre for African and International Studies
- Confucius Institute
- Department of Communication Skills
- Department of English
- Department of French
- Department of Ghanaian Languages and Linguistics
- Department of Philosophy and Classics
- Department of Religion and Human Values
- Department of Theatre and Film Studies
- Information and Literacy Skills Unit

Faculty of Law
- Centre for Legal Research
- Department of Advanced Legal Studies
- Department of Legal Extension
- Department of Legal Studies

Faculty of Social Sciences
- Centre for Gender Research, Advocacy and Documentation
- Department of Geography and Regional Planning

- Department of Population and Health
- Department of Sociology and Anthropology
- Department of Tourism and Hospitality Management
- Institute for Oil and Gas Studies

School of Business
- Department of Accounting
- Department of Human Resource Management
- Department of Finance
- Department of Marketing & Supply Chain Management
- Department of Management
- Centre for Entrepreneurship and Small Enterprises Development
- Business

School for Development Studies
- Department of Environment, Governance and Sustainable Development
- Department of Integrated Development Studies
- Department of Labour and Human Resource Studies
- Department of Peace Studies

School of Economics
- Centre for Data Archiving Management Analysis Advocacy

- Department of Applied Economics
- Department of Data Science and Economics Policy
- Department of Economic Studies
- Microfinance Unit

RESEARCH FOCI

Faculty of Law
- The faculty's broad areas for future research between 2023 – 2027 will include:
- Public international law
- Conflict of laws
- Public law
- Law, politics, and governance
- Law, crime, and justice
- Law and education
- Commercial and transactional law
- Intellectual property
- Local government studies
- Law, gender, children, and disability studies
- Law, development, and society
- Law and sexuality studies
- Socio-legal studies

Areas for Evidence Synthesis
- Business and human rights
- The law and fourth industrial revolution
- Law, crime, and justice
- Commercial law

- Family law
- Judicial decisions

School of Economics
- Finance and development
- Microfinance, poverty and enterprise development
- Yearly estimates on the cost of raising children in Ghana.
- Labour and educational outcomes
- Agriculture, food security and nutrition for sustainable development;
- Fiscal and financial sector analysis
- Poverty and inequality studies
- Health economics
- Macroeconomic policy analysis
- Tourism, inequality and sustainable development
- Economy-wide policy impact analysis
- Institutions, illicit financial flows and economic growth
- Trade and environment
- Climate change and monetary policy
- Financial inclusion and household indebtedness
- Fiscal stabilisers and informality
- Industrial revolution, technology and development

- Blue economy, governance and social resilience

Areas for Evidence Synthesis
- Data management and economic policy
- Data science and macroeconomic policy analysis
- Trade and investment policy analysis
- Impact of social interventions
- Microfinance and poverty

School for Development Studies
- Digitalisation and the future of work(ers)
- Climate change, green and decent jobs
- Vulnerability of workers, interest representation and policy regulation
- Land use regulations and food security
- COVID-19 and mmdas operations
- Urbanisation and status of wetlands in southern Ghana
- Illegal mining in Ghana
- Elections and security management in Ghana
- Climate change, livelihoods and conflict
- Alternative dispute resolution

- The changing nature of work(ers)
- Understanding development
- Urbanisation and status of wetlands
- Enforcement of land-use laws and regulations in a built-up environment for resilient towns and cities in Ghana
- The state of land-grabbing in Ghana
- Illegal mining in Ghana
- Political vigilantism
- Election security and management
- Gender, peace and development
- Peace psychology

Faculty of Arts
- Intellectual values
- Translation and language acquisition
- Theatre partnership and quality education;
- Logic and critical thinking in students' academic writing
- Language education and policy;
- Literature and academic communication
- Languages and gender
- Religion and technology
- Technology and documentation of indigenous knowledge systems
- Language and media studies
- Innovation and technology in theatre and film production
- Religion, development and ecology
- Tradition and climate change
- Literature and environment
- Theatre, climate action, and cultural sustainability
- Languages and health communication
- Theatre, health and wellbeing
- Religion, human rights and politics
- Graeco-Roman social and military
- African philosophy

School of Business
- Sustainability in supply chain
- Customer satisfaction survey
- Project sustainability
- Marketing strategies in organisations
- Small business development
- Circular economy
- Entrepreneurship education and training

Areas for Evidence Synthesis
- Market orientation
- Service quality management
- Supply chain risk management

- Project sustainability
- Project risk management
- Circular economy
- Small business development

Faculty of Social Sciences
- Gender empowerment
- Society, technology, and social change
- Globalisation, security, and conflict
- Population, health, environment and development
- Gender, sexuality, and development
- Sustainable hospitality and tourism
- Hospitality and tourism impacts
- The visitor economy
- Digital hospitality and tourism economy
- Global energy transition dynamics
- Petroleum revenue management
- Petroleum host-community development
- Petroleum and power market reforms and restructuring
- Energy, environment and climate change
- Sexual and reproductive health and rights
- Migration, diaspora and

refugee studies
- Maternal and child health

Areas for Evidence Synthesis
- Gender issues in health
- Gender, vulnerabilities and human development
- Gender policies and interventions
- Witchcraft, culture, and relationships
- The new "extended family" system
- Religion, science, and development
- The proverbial Ghanaian hospitality
- Leisure travel amongst Ghanaians
- Implications of global transition to renewable energy
- Optimal pricing structure/framework for downstream petroleum products
- Oil and gas resource Sustainability
- Poverty, COVID-19 and adolescent sexual and reproductive health
- COVID-19 vaccine hesitancy and benefits
- Tracking progress towards the achievement of the health-related SDGs
- Global energy transition dynamics

- Petroleum revenue management
- Petroleum host-community development
- Petroleum and power market reforms and restructuring
- Energy, environment and climate change
- Sexual and reproductive health and rights
- Migration, diaspora and refugee studies
- Maternal and child health

COLLEGE OF
EDUCATION STUDIES

Introduction

The College of Education Studies (CES) is the premier College in the University. It comprises three Faculties and one School, namely, Faculty of Humanities and Social Sciences Education, Faculty of Science and Technology Education, Faculty of Educational Foundations and the School of Educational Development and Outreach. CES has the mandate for training high calibre personnel for Ghanaian educational institutions, educational research systems, and training of other professionals for all sectors of the economy. The college has the highest number of students and faculty in the University.

The college's vision is to become the centre of excellence for training quality teaching personnel, Educational leaders and specialists, and technical and professional staff for the Ministry of Education and other sectors of the Ghanaian economy. In doing so, the college is challenged to provide a critical exploration of learning from early years to adulthood and different contexts of learning, both formal and informal. The college has developed a five-year strategic plan to provide direction for the Faculties and Schools to realise the mission and vision of UCC and some of the SDGs, particularly SDG 4 and 5. The operations of the Faculties and School generally cover three broad areas: teaching, research, and extension services.

Faculty of Humanities and Social Sciences Education
- Department of Arts Education
- Department of Business and Social Sciences Education

Faculty of Educational Foundations
- Department of Education and Psychology
- Department of Basic Education
- Department of Guidance and Counselling
- Counselling Centre
- Centre for Child Development and Referral
- Resource Centre for Alternative Media and Assistive Technology

Faculty of Science and Technology Education
- Department of Science Education
- Department of Mathematics and Information, Communication and

Technology Education
- Department of Vocational and Technical Education
- Health, Physical Education and Recreation

School of Educational Development & Outreach
- Institute of Education
- Centre for Teaching Support
- Centre for Teacher Professional Development

Institute for Educational Planning and Administration

RESEARCH FOCI
Faculty of Humanities and Social Sciences Education
- Teacher education in the humanities
- Curriculum reform, practice and implementation
- Teaching and learning across the humanities

Areas for Evidence Synthesis
- Teacher quality in the humanities
- Curriculum alignment in the humanities

Faculty of Educational Foundations
- Counselling
- Organisational effectiveness

and work experiences
- Psychological wellbeing
- Students' learning, assessment and evaluation
- Sociology of education
- Special education, inclusiveness and segregation
- Basic education

Areas for Evidence Synthesis
- Teacher competencies and test construction
- Schooling, school-community collaboration, school culture and community development
- Learner behaviours and academic performance
- Psychosocial antecedents of workplace wellbeing
- Quality of life among the terminally-ill
- Inclusive education in Ghana and beyond

Faculty of Science and Technology Education
- Technical vocational training and consumer education
- Teaching and learning of maths and science
- Technological and Innovative pedagogies
- STEM education
- Disease prevention and management

- Health Promotion
- Organisation and management of School physical education and sports programmes
- Teacher education and curriculum alignment from colleges of education to basic schools
- Sports consumption culture
- Body image, health and quality of life
- Teacher professional development

Areas for Evidence Synthesis
- Gender, access, equity, and quality
- Curriculum development and teaching
- Public perception about TVET programmes
- Sustainability of TVET training in Ghana.
- Acceptability of contemporary Art in Art Education
- Food security and small-scale farmers' income
- Fit and constructional qualities of locally produced cloth masks
- Microbial contamination of hospital linens
- Household production and economic welfare of the family
- Food security and social

acceptability interventions
- Teacher and teacher education
- Professional development
- STEM education
- Cardiovascular diseases, diabetes remission, and lifestyles
- Climate change and workers' health
- Community interventions and mental illness
- E-learning in TVET
- Collaborative teaching and learning strategies
- Assessment practices in the classroom

School of Educational Development & Outreach
- 21st century skills development
- Curriculum innovations
- Authentic practices
- Content area pedagogies at the basic school level
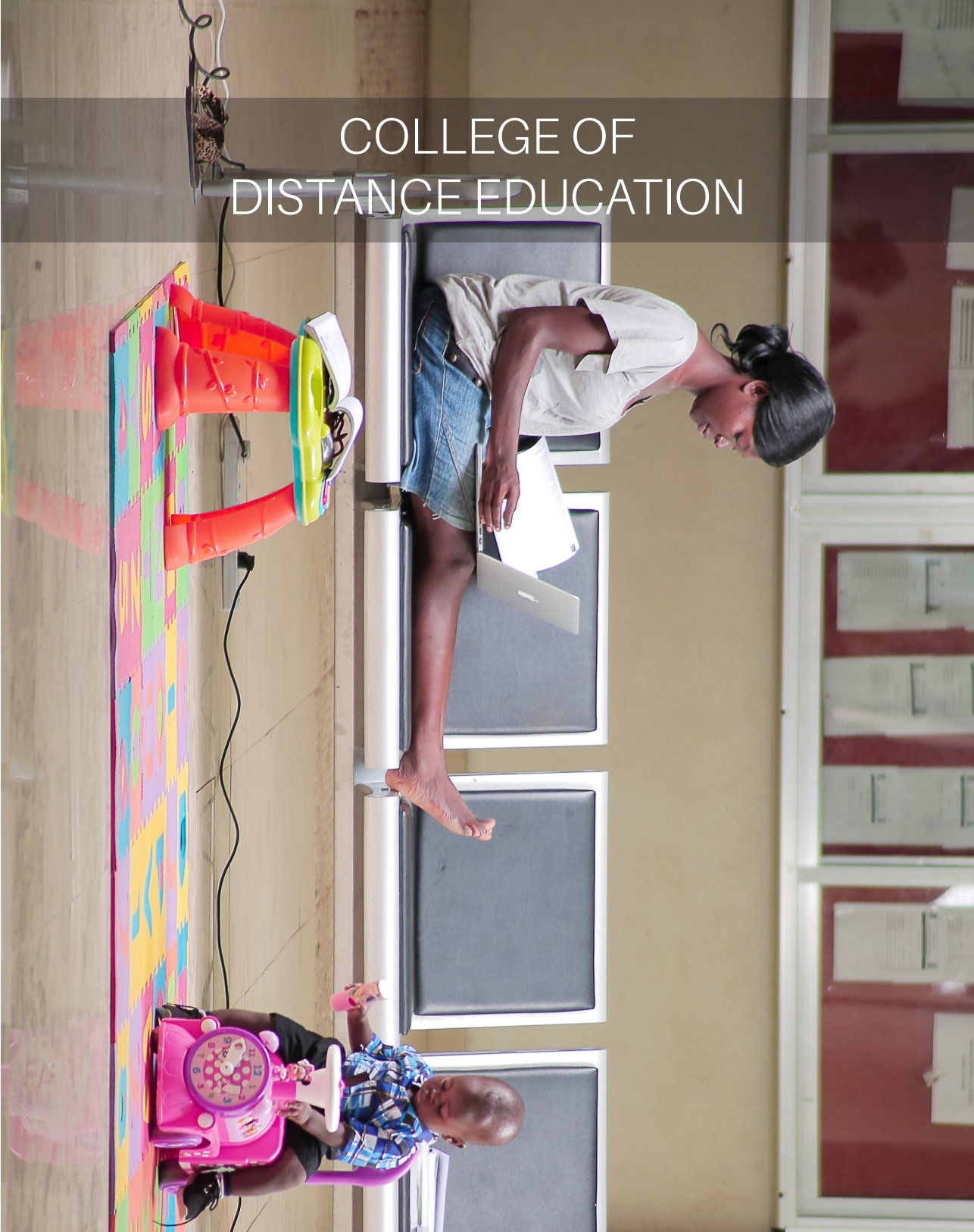- Technology assistive pedagogy

Areas for Evidence Synthesis
- Teacher licensure exams
- Teaching practice for teacher trainees
- Online assessment effects

Institute for Educational Planning and Administration
- SDG4 policy research
- Educational policy implementation analysis
- Higher education policy and governance
- Leadership, administration and planning in higher education
- Teaching time utilisation studies
- Learning outcome disparities
- Learning assessment data creation and utilisation

Introduction

The College of Distance Education (CoDE) in the University of Cape Coast is the premier college in the country that is solely dedicated to distance education. This attribute offers a competitive advantage to the University to run the dual-mode of higher education. The college is mandated to provide training by distance mode to augment human resources needed by Ghana Education Service, business and private sectors of the economy. Currently, the college comprises four departments: the Department of Education, the Department of Business Studies, the Department of Mathematics Science and ICT, and the Department of Arts and Social Sciences. In addition to the four departments, there are also academic and administrative units such as Quality Assurance, Student Records Management, Production and Reprographics, E-learning, Examinations, Teaching Practice, Student Support, Counselling, Admissions, and Postgraduate. The college has students across the entire country and provides affordances for projecting the name of the University country-wide.

The widespread of over 80 study centres across the country has necessitated the creation of 10 regional administrative centres to manage the students and course tutors within the respective catchment areas. Over the years, the core activities of the college have been conducting matriculation and graduation ceremonies, monitoring weekend face to face tutorial sessions, quizzes and end of semester examinations for students across the country. The following are the departments in the College:

- Department of Maths, Science & ICT
- Department of Education
- Department of Business
- Department of Arts and Social Sciences

RESEARCH FOCI

Department of Maths, Science & ICT

- Technology integration in distance education
- Students' satisfaction
- Online learning in distance education
- Augmented reality utilisation in distance education

- Virtual laboratory utilisation in distance education
- Quality assurance in distance education.
- Digitisation of distance learning materials
- Artificial intelligence in teaching and learning

Department of Education
- Teacher professional development through distance learning
- Curriculum for distance students with special educational needs
- Study habits of distance learners
- Human resource development in distance education
- Instructional strategies in distance learning
- Leadership in distance education
- Support services for distance learners

Department of Business
- Financial efficiency in outreach programmes in institutions of higher learning
- Digital competencies and entrepreneurship education
- Employee engagement and

stress management studies.
- Brand equity in distance education delivery
- Financial and psychological wellbeing of distance education students

Department of Arts and Social Sciences
- Work-life balance among distance education students
- Job satisfaction, welfare and staff commitment
- Students' housing contracts
- Entrepreneurial capabilities in a multidisciplinary space
- Staff workload and productivity

Areas for Evidence Synthesis
- Augmented reality, virtual reality, simulations and virtual laboratories in distance education delivery in Sub-Saharan Africa.
- Online dissertation/project work supervision in distance education delivery in Sub-Saharan Africa.
- Quality assurance antecedents in distance education delivery in Sub-Saharan Africa.
- Antecedents of programme-continuance intention in distance education delivery in Sub-Saharan Africa.

- Quality assurance antecedents in distance education delivery in Sub-Saharan Africa.
- Antecedents of programme-continuance intention in distance education delivery in Sub-Saharan Africa.

COLLEGE OF HEALTH AND ALLIED SCIENCES

Introduction

College of Health and Allied Sciences (CoHAS) is a three-tier College consisting of four Schools; Nursing and Midwifery, Medical Sciences, Allied Health Sciences, and Pharmacy and Pharmaceutical Sciences, each with several Academic Departments. Together, the Schools are responsible for developing and administering programmes related to the training of healthcare professionals. CoHAS offers rigorous curricula grounded in the sciences connected to the healthcare professions, emphasizing contemporary issues. Our curricula are built on our commitments to interdisciplinary inquiry, international understanding, interactive teaching, research and creative endeavours, practical application, and social responsibility towards all communities. The following are the departments of the College:

School of Nursing and Midwifery

- Department of Maternal and Child Health Nursing
- Department of Adult Health Nursing
- Department of Mental Health Nursing

- School of Allied Health Sciences
- Department of Medical Laboratory Sciences
- Department of Optometry and Vision Science
- Department of Biomedical Sciences
- Department of Physician Assistant Studies
- Department of Imaging Technology and Sonography
- Department of Health Information Management
- Department of Clinical Nutrition and Dietetics
- Department of Sport and Exercise Science

School of Pharmacy & Pharmaceutical Sciences

- Department of Pharmacotherapeutics and Pharmacy Practice
- Department of Pharmaceutical Microbiology
- Department of Pharmacognosy and Herbal Medicine
- Department of Pharmaceutics
- Department of Pharmaceutical Chemistry

School of Medical Sciences

- Department of Anatomy and Cell Biology
- Department of Anaesthesia and Pain Management
- Department of Chemical Pathology
- Department of Community Medicine
- Department of Haematology
- Department of Internal Medicine and Therapeutics
- Department of Medical Biochemistry
- Department of Medical Education and IT
- Department of Medical Imaging
- Department of Microbiology and immunology
- Department of Obstetrics and Gynaecology
- Department of Pathology
- Department of Paediatrics and Child Health
- Department of Pharmacology
- Department of Physiology
- Department of Psychological Medicine and Mental Health
- Department of Surgery

RESEARCH FOCI

School of Nursing and Midwifery

- Sexual and reproductive care
- Family planning education
- Maternal and child health
- Mental health
- Community medicine and health
- Pre-conception healthcare promotion
- Nursing education
- Hospital acquired infections
- Patients' right

Areas for Evidence Synthesis

- Self-management support for chronic/non-communicable conditions
- Current practices of epilepsy management in schools
- Best practices in clinical teaching
- End-of-life nursing care
- Quality of life of adults with advanced cancer of the cervix
- Psychosocial effects of a cancer diagnosis on patients
- Maternal and child mental health
- Psychosocial care for prenatal losses
- Paediatric length of hospital stay
- Psychiatric medication adherence

- Recovery and rehabilitation efforts in Ghana
- Psychosocial interventions in the management of adults with Cancer
- Spousal support in increasing cervical cancer screening uptake in Sub-Saharan Africa/ developing countries
- Modelling, optimisation and simulation-based on meta-data with applications to any field of interest

School of Pharmacy & Pharmaceutical Sciences
- Molecular medicine
- Infection and immunity
- Non-communicable diseases
- Drug discovery and development
- Cancer research
- Global health
- Neuroscience

Areas for Evidence Synthesis
- Critical appraisal of Ghanaian medicinal plants and products clinically used to manage malaria, diabetes, and hypertension
- Opioid stewardship
- Antibiotic stewardship
- Current and emerging mechanisms of antibiotic resistance

- Herbal products and antimicrobial drug resistance

School of Medical Sciences
- Pharmacology and drug discovery
- Medical microbiology and immunology
- Oncology and therapy
- Medical imaging and diagnosis
- Mental health and interventions
- Developmental and reproductive biology
- Neurological disorders and therapeutic options
- Non-communicable diseases and therapy
- Internal medicine and therapy
- Artificial intelligence in health
- Human nutrition and dietetics
- Medical education
- Epidemiology and community medicine
- Clinical trials
- Medical entomology

Areas for Evidence Synthesis
- Global impact of communicable and non-communicable diseases and interaction between the two groups of diseases

- Global impact of COVID-19 on other diseases
- Ethnomedicinal plants in West Africa
- Artificial wound healing
- Environmental neurotoxicity
- Artificial intelligence (AI) is application in neurological disorders
- Maternal mortality during childbirth
- Genomic contributions to disease aetiology and susceptibility in |African populations
- Viral hepatitis elimination in sub-Saharan Africa
- Burden of care among the chronically ill and their caregivers in LMICs

School of Allied Health Sciences
- Ophthalmic and vision science research
- Infectious and neglected tropical diseases
- Vector ecology and insecticide resistance
- Drug discovery and development
- Herbal medicine
- Public health and non-communicable diseases
- Clinical informatics

- Epidemiology and environmental health
- Sport, exercise and wellbeing
- Mental health
- Reproductive biology and anthropometric indices
- Human nutrition and dietetics
- Oncology and therapy
- Medical imaging and practice

Areas for Evidence Synthesis
- Antiretroviral therapy and risk of obesity among people living with HIV (PLHIV)
- Contact lens practise in sub-Saharan Africa
- Economic burden of haemoglobinopathy management in sub-Saharan Africa
- Effectiveness of health interventions in diabetes and hypertension treatment and management in Africa
- Mother/caregiver-directed interventions in improving healthcare
- Effectiveness of ready-to-use therapeutic foods with elevated iron content in the treatment of severely wasted children in low- and middle-income countries
- Effectiveness of ready-to-use therapeutic foods with varying

essential fatty acid composition in the treatment of severely wasted children in low- and middle-income countries

- Exercise injury rehabilitation practices in Ghana
- Fluid-based biomarkers associated with neurodegenerative disorders
- Nutritional and health effects of consuming insect-fortified food products among children in low- and middle-income countries
- Nutritional and health effects of consuming insect-fortified food products among women of child-bearing age in low- and middle-income countries
- Nutritional practices and sport performance
- Nutritional recovery of infants <6 months with growth faltering in low- and middle-income countries
- Prevalence and risk factors associated with age-related macular degeneration in Africa
- Telemedicine & electronic health records system implementation & integration

INAUGURAL ENTRY OF UCC
IN THE TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS

-- UNIQUE ACHIEVEMENTS AND HIGHLIGHTS --

1 UCC is the topmost ranked university in Ghana in the 2022 THE rankings

2 UCC is among the top 5 universities in Africa in the 2022 THE rankings

3 UCC is ranked number one globally in terms of field weighted citation impact (research influence) - No university in Ghana has ever achieved this position since the Times Higher Education (THE) annual rankings commenced nearly two decades ago.

4 Overall, UCC is ranked 301-350 globally

5 UCC is the highest ranked new entrant out of the 138 universities that made their debut on the 2022 global universities ranking league.

THE WORLD UNIVERSITY RANKINGS 2022

UNIVERSITY OF CAPE COAST

CAPE VARS · UNIVERSITY OF COMPETITIVE CHOICE

THE UNIVERSITY OF COMPETITIVE CHOICE