**Africa Centers of Excellence for Development Impact (ACE Impact)**

 **KNUST Engineering Education Project**

 **Implementation Plan**

 **2019 – 2023**

 **(Draft November 6, 2019)**

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**List of abbreviations and acronyms**

AAU Association of African Universities

ACE African Centre of Excellence

CoE College of Engineering

DLI Disbursement Link Indicator

ECG Electricity Company of Ghana

EMP Environmental Management plan

GNPC Ghana National Petroleum Company

ICT Information, Communication and Technology

IIT Indian Institute of Technology

KEEP KNUST Engineering Education Project

KNUST Kwame Nkrumah of University of Science and Technology

M&E Monitoring and Evaluation

MSc Master of Science

MoU Memorandum of Understanding

MPhil Master of Philosophy

NTNU Norwegian University of Science and Technology (NTNU),

PC Petroleum Commission

PhD Doctor of Philosophy

RFU Regional Facilitation Unit

VALCO Volta Aluminum Company Limited

VRA Volta River Authority

# NARRATIVE SUMMARY

The College of Engineering (CoE), Kwame Nkrumah University of Science and Technology (KNUST) runs 18 diﬀerent engineering programmes at the undergraduate level and 30 postgraduate programmes. The vision of CoE is to become Africa’s leading Engineering College by 2025 (Corporate Strategic Plan 2016 – 2025). A key approach to achieving this vision is by expanding postgraduate education and research through innovative programmes that would attract local and international students.

The KNUST Engineering Education Project (KEEP), has been established as one of the Africa Centers of Excellence (ACE) for Development Impact, an initiative of the World Bank to address the shortage of high-level skills and applied research in Ghana and the sub-region. The project has a budget of USD 5.5 million for a five-year duration (2019-2023). The aim of KEEP is to deliver high quality postgraduate programs, conduct and disseminate international caliber applied research focused on addressing priority developmental challenges related to industrialization, energy and digital development. The project will also catalyze an institution-wide strengthening of the other engineering and technology programs within the College of Engineering (CoE).

KEEP has a target of training at least 75 PhDs and 100 Masters graduates to help address developmental challenges related to engineering and technology advancement in energy systems and digital development.

The activities that will be used to achieve the objectives of KEEP are as follows:

* The project will improve the quality of education through the provision of infrastructure (classrooms and equipment) to enhance learning and research environment, seek international accreditation of the programs, structured internship with industry and incorporate entrepreneurship, innovation and startups development.
* In consultation with stakeholders, KEEP will update and/or launch new postgraduate (master’s and Ph.D.) degree programmes that are accredited to meet international high-quality standards. The project will offer curricula that ensure that students have the needed competencies upon graduating from their degree programmes, including analytical, digital skills, and entrepreneurial competencies.
* KEEP will establish partnerships with national, regional and global sectoral actors to ensure strong academia and industry linkage to create more opportunities for internships, collaborative research and contribute financially to the long-term sustainability of the KEEP to drive economic transformation through the supply of highly skilled workforce.
* Establish Industry and Scientific advisory boards to provide input and guidance to enhance the quality of education and research based on global best practice.
* The project will identify and secure sustainable sources of funding to ensure sustainable postgraduate education and research at College of Engineering, KNUST.

KEEP is expected to increase the supply of highly skilled graduates and applied research knowledge to drive economic transformation in Ghana and the sub-region. In addition, the College of Engineering is expected to become the sought-after place of choice for Engineering and Technology postgraduate studies in Africa.

# OVERVIEW OF ACTIVITIES AND COST FOR FIRST YEAR

## 2.1 Planned Activities and Outputs.

The planned activities for the first year are as follows:

* Establish a team for the smooth operation of the project. A dedicated website will be created for project (www.keep.knust.edu.gh).
* Recruitment of project staff (Project Manager and Project Accountant)
* Appointment of Project Lead, Deputy Project Lead, Project Coordinators and Research Theme Leads
* Design of project building is at the final stage
* International Scientific and Sectoral Advisory Boards established
* Recruitment of postgraduate students (national and non-national)
* Terms of reference of Gap Assessment for post graduate programmes being finalized
* Project Management certification for Project Lead and Deputy Project Lead

The key output for the first year are as follows:

* 15 PhD’s admitted
* 20 MSc’s admitted
* Advisory Board established
* Local accreditation documents submitted to accreditation board

## 2.2 Expected Revenue for Year 1

Table 1 provides the overview of the first-year budget. Details of the activities in Table 1 are presented in the activity sheets under section 7. Part of the budget of the project will be used to support training and research with partners in the private sector, partner academic institutions, and public sector organizations.

Table 1: Overview of Output and Funds generated for Year 1 (Revenue Budget)

|  |
| --- |
| **Outputs and funds generation year 1 (US$)** |
| ACE results  | Expected outputs in numbers | Percentages of the DLI | Unit price | Expected revenue |
| DLI 1 Readiness  |   |   |   |   |
| *DLI 1.1 Basic Readiness* | 1 | (0 or 100) | 425,000 | 425,000 |
| *DLI 1.2 Full Readiness* | 1 | (0 or 100) | 425,000 | 425,000 |
| DLI 3 Quantity of students  |  |   |   |   |
| *DLI 3.1a New eligible PhD student’s male* | 8 |   | 10,000 | 80,000 |
| *DLI 3.1b New eligible PhD student’s female* | 3 |   | 12,500 | 37,500 |
| *DLI 3.1c New eligible PhD student’s regional male* | 3 |   | 12,500 | 37,500 |
| *DLI 3.1d New eligible PhD student’s regional female* | 1 |   | 15,600 | 15,600 |
| *DLI 3.2a New eligible Master student’s male* | 10 |   | 2,000 | 20,000 |
| *DLI 3.2b New eligible Master student’s female* | 4 |   | 2,500 | 10,000 |
| *DLI 3.2c New eligible Master student’s regional male* | 4 |   | 4,000 | 16,000 |
| *DLI 3.2d New eligible Master student’s regional female* | 2 |   | 5,000 | 10,000 |
| DLI 4 Quality of Education |   |   |   |   |
| *DLI 4.1b GAP assessment following International standards*  |   | (0 or 100) | 100,000 | 100,000 |
| *DLI 4.3a Infrastructure improvement for research and learning (procurement and civil works)*  | 1 | (0 or 100) | 300,000 | 300,000 |
| *Step 1: Approved plan*  |
| DLI 5 Relevance of Education & Research |   |   |   |   |
| *DLI 5.1a External generated revenue from private sector*  | 50,000 |   | X 2 | 100,000 |
| *DLI 5.1b External generated revenue from other sectors*  | 100,000 |   | X 1 | 100,000 |
| *DLI 5.2a Number of students with at least 1-month internship or staff with placement nationally*  | 20 |   | 1,000 | 20,000 |
| DLI 6 Fiduciary Enhancement |   |   |   |   |
| *DLI 6.1 Timely fiduciary reporting* |   | (0 or 100) | 22,000/year | 22,000 |
| *DLI 6.2 Functioning internal audit unit*  |   | (0 or 100) | 22,000/year | 22,000 |
| *DLI 6.3 Web Transparency on Fiduciary reports* |   | (0 or 100) | 22,000/year | 22,000 |
| *DLI 6.4 Quality of Procurement planning* |   | (0 or 100) | 22,000/year | 22,000 |
| **Total revenue expected triggered from ACE program** |  |  |  | **1,784,600** |

## 2.3 Expenditure Budget for Year One

The expected expenditure for Year 1 is shown in table 2 below.

Table 2: Overview of expected activities and expenditures for the first project year

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Rank 1(highest) -5**  | **Results/Intended Outcome Activity/Task** | **Budget Estimates ($)** |
| **ACE leader** | **Partners** | **Total for Year 1** |
| **1** |  | **Strong focus on postgraduate education with affirmative action on females and regional students** |  |   |  |
| 1.1 | 1 | 15 PhDs recruited | 10,000 | 80,000 | 90,000 |
| 1.2 | 1 | 20 MSc recruited | 6,000 | 54,000 | 60,000 |
| 1.3 | 1 | Gap Assessment of the Post graduate education in engineering at KNUST  | 15,000 | 0 | 15,000 |
| 1.4 | 1 | Accreditation and re-accreditation of Postgraduate programmes | 50,000 | 0 | 50,000 |
| 1.5 | 3 | Marketing and branding of postgraduate programmes  | 25,000 | 0 | 25,000 |
| 2 |   | **Improve learning and teaching environment** |   | 0 |   |
| 2.1 | 1 | Construct building for laboratory, research offices and postgraduate classrooms, | 500,000 | 0 | 500,000 |
| 2.2 | 3 | Procure laboratory equipment and consumables | 100,000 | 0 | 100,000 |
| 2.3 | 2 | Purchase vehicles for the centre | 100,000 | 0 | 100,000 |
| 2.4 | 1 | Procure teaching and research equipment including office furniture  | 66,019 | 0 | 66,019 |
| 3 |  | **Enhance Applied Research, Innovation and Entrepreneurship** |   | 0 | 0 |
| 3.1 | 1 | Structured Student internship | 20,000 | 0 | 20,000 |
| 3.2 | 1 | Organise regional Joint Conferences (ESTE) | 35,000 | 15,000 | 50,000 |
| 3.3 | 1 | Structured Faculty internships and joint applied research | 20,000 | 0 | 20,000 |
| 3.5 | 2 | Industry and Scientific Advisory boards | 10,000 | 20,000 | 30,000 |
| 3.6 | 2 | Innovation competition and Challenge Fund, start ups | 5,000 | 10,000 | 15,000 |
| 3.7 | 1 | Workshop with industry to inform research, attract research funding and enhance research uptake | 10,000 | 5,000 | 15,000 |
| 3.8 | 1 | Staff development and skills training | 40,000 | 10,000 | 50,000 |
| 4 |   | **Improve governance and administration of the ACE institution** |   | 0 | 0 |
| 4.1 | 1 | Identify and sign MOUs with strategic partners | 25,000 | 0 | 25,000 |
| 4.3 | 1 | Centre management expenses (office consumables and meetings)  | 30,000 | 0 | 30,000 |
| 4.4 | 1 | Travel and meetings expenditure | 75000 | 0 | 75,000 |
| 4.5 | 1 | Remuneration of project staff (PM, Accountant, Communication, Driver) | 75,000 | 0 | 75,000 |
| 5 |  | **Management and Visibility** |   |   |   |
| 5.1 | 1 | Visibility expenses (including website) | 15,000 | 0 | 15,000 |
| 5.2 | 1 | Information outreach and marketing strategy to attract potential regional students | 25,000 | 0 | 25,000 |
| 5.3 | 1 | Audit fee | 5,000 | 0 | 5,000 |
| 5.4 | 1 | Publish newsletters and policy briefs | 5,000 | 0 | 5,000 |
|   |  | **SUB-TOTAL** | **1,267,019** | **0** | **1,471,019** |
|   |   | Contingency (10% of total Cost) | 126,702 | 0 | 147,102 |
|   |   |  **GRAND-TOTAL** | **1,393,721** | **194,000** | **1,618,121** |

## 2.4 Partners Budget

The budget for partners is as shown in Table 3 below:

Table 3: Overview of budget distribution among partners for year 1

| **Code** | **Result/Activity/*****Task*** | **Budget Estimate (US$)** |
| --- | --- | --- |
| ***Public Technical Universities*** | ***Private Universities*** | ***Industry Partners*** | ***Gambia Technical Training Institute*** | ***Not yet identified*** | **Total Partner Budget** |
| **Action Plan 1** | **Strong focus on postgraduate education with affirmative action on females and regional students** | ***(Component total for partner)*** | ***(Component total for partner)*** | ***(Component total for partner)*** | ***(Component total for partner)*** | ***(Component total for partner)*** | ***(Partners total of component)*** |
| 1 | *15 PhDs and 20MScs recruited* |
| *10PhDs trained from partner institutions* | *12,900* | *12,900* | *12,900* | *25,200* |  | *63,900* |
| *14MScs trained from partner institutions* | *10,000* | *10,000* | *10,000* | *20,000* |  | *50,000* |
| **Action Plan 2** | **Enhance Applied Research, Innovation and Entrepreneurship** | ***(Component total for partner)*** | ***(Component total for partner)*** | ***(Component total for partner)*** | ***(Component total for partner)*** |  | ***(Partners total of component)*** |
| 4 | *8 start-up/incubators* | *3,000* | *3,000* | *3,000* | *4,050* |  | *13,050* |
| *Industry advisory boards for specific themes* | *-* | *-* | *30,000* | *-* |  | *30,000* |
| *Innovation competition and challenge* | *3,000* | *3,000* | *3,000* | *4,050* |  | *13,050* |
| **TOTAL** |  |  |  |  |  |  | ***170,000*** |

# WORKPLAN FOR PROJECT LIFESPAN: 2019-2023

The work plan for the entire project is shown in Table 4 below.

Table 4: Work plan for KEEP



# IMPLEMENTATION ARRANGEMENTS

## 4.1 Guiding Policies, Rules and Regulations

KNUST’s general administrative policies apply to the project. The project will be guided by the following:

* KNUST financial and stores regulation which is consistent with the national Financial Administration Act, 2003
* KNUST procurement manuals, which is consistent with the Ghana Public Procurement Act, 2003

The Procurement Act provides rules for public procurement, makes administrative and institutional arrangements for procurement including tendering procedures. The Financial Administration Act, 2003 regulates the financial management of the public sector; prescribes the responsibilities of persons entrusted with financial management; ensure the effective and efficient management of state revenue, expenditure, assets, and liabilities, resources of the government (including other public funds) and to provide for matters related to these.

## 4.2 Governance Structures

The Project is implemented directly under the College management with support from KNUST’s central administration. The College acting through the Provost will ensure that project funds are planned for and disbursed according to the schedule and within the project framework.

The Project Implementation Team is composed of the Project Leader, Deputy Project Leader, Project Accountant, Project Manager and Project Coordinators (Programmes, Partnership, Monitoring and Evaluation, Innovations and Marketing and ICT) (Figure 1). The team will have scheduled monthly meetings in the second week of every month, which will be chaired by the Project Lead. The Project Implementation team will be responsible for providing leadership, day-to-day management, coordination and fiduciary responsibilities of the project as well as working closely with the other staff members of the university in implementing the ACE project. The key activities are as follows:

* Academic programmes (MSc, PhD training)
* Research programme management
* Student/faculty Internships and exchange programme
* Procurement of resources
* Financial accounting and reporting for DLI

The ACE project will run the academic programmes (MSc/MPhil/PhD) through the various departments in the college. The project implementation team will ensure the achievement of the project objectives in line with the results framework. The College has three Faculties and eleven academic Departments where the various programmes will be hosted. The institutional, national and international accreditation of the programme will be coordinated by the academic progammes with support from the project office working with the Departments.

The Partnerships Coordinator will work with the College vacation training officer to facilitate and coordinate all corresponding, placement, accommodation and logistics for internships with industry partners and student/faculty exchange programme with academic partners.

Figure 1: KEEP and its alignment with the University structure.

## 4.3 ACE Project advisory boards

There will be two advisory boards to provide guidance for the smooth running of the project. These are the industrial and the Scientific Advisory Boards. Industrial Advisory Board consisting of key industrial partners will be meetings twice a year to provide strategic guidance. The scientific advisory body consisting of leading academics to make input in education and research activities in the project. Scheduled meeting will be held annually and will be conducted either face to face or through video conference or a combination.

### **4.3.1 National Sectoral Industry Advisory Board**

The Sector Advisory Board will provide guidance to the project, approve the project implementation plan. This will assist in accomplishing greater developmental impact and relevance, the following persons drawn from various organizations are proposed for the Sector Advisory Board (See Table 4).

**Table 5: Sector Advisory Industry Board – Proposed Members**

|  |
| --- |
| Name **Nana Joe Mensah** |
| Position/Title Vice President and Country Manager | Company/Organization Kosmos Energy Ghana |
| Tel. # 0243200681 | Email:jnmensah@kosmosenergy.com |
| Expertise: Oil & Gas |
| Anticipated Contribution Internships, Funding, Academic programmes |
| Name **Dr Kwaku Aning** |
| Position/Title Board Chair | Company/Organization Ghana Atomic Energy Commission |
| Tel. #0234751300 | Email:aningk49@gmail.com |
| Expertise: Energy |
| Anticipated Contribution Internships, Funding, Academic programmes |
| **Name Ing K. Asare Yeboah** |
| Position/Title Board chairman | Company/Organization Associated consultants |
| Tel. #0274931054 | Email:kasareyeb@gmail.com |
| Expertise: Structural Engineer |
| Anticipated Contribution Internships, Funding, Academic programmes |
| Name **Dr Ben K. D. Asante** |
| Position/Title CEO | Company/Organization Ghana Gas Company Ltd |
| Tel. #0501564945 | Email:basante@internatpipe.com |
| Expertise: Oil and Gas |
| Anticipated Contribution Internships, Funding, Academic programmes |
| Name **Patricia Obo-Nai**  |
| Position/Title CEO | Company/Organization Vodafone Ghana |
| Tel. #0202002023 | Email: patricia.obo-nai@vodafone.com |
| Expertise: Digital Development |
| Anticipated Contribution Internships, Funding, Academic programmes |
| Name **Ing William Amuna** |
| Position/Title Technical Controller | Company/Organization Millennium Development Authority |
| Tel. #0244315243 | Email:wamuna@gmail.com |
| Expertise: Power |
| Anticipated Contribution |
| Name : **Dr Victor Atiemo-Obeng**  |
|  Position/Title | Company/Organization DOW Chemical Company |
| Tel # +19897503103 | Email: vaa-o@sbcglobal.net |
| Expertise: Chemical Engineering |
| Anticipated Contribution |

### **4.3.2 International Scientific Advisory Board**

The International Scientific Advisory Board will provide guidance to the project particularly in the areas of academic programme and research. This will assist in accomplishing greater developmental impact and relevance, the following persons drawn from various organizations are proposed for the Sector Advisory Board (See Table 5).

**Table 6: International Scientific Advisory Board**

|  |
| --- |
| Name **Prof Jon Kleppe** |
| Position/Title Professor | University/Institution Norwegian University of Science and Technology (NTNU), Norway |
| Tel. # +4773412873 | Email: jon.kleppe@ntnu.no |
| Expertise: Petroleum Engineering |
| Anticipated Contribution: ? |
| Name **Professor Albert Ebo Richardson** |
| Position/Title Emeritus  | University/Institution: California State University, Chico. |
| Tel. # | Email: eboinchicoe@sbcglobal.net |
| Expertise: Electrical & Computer Engineering |
| Anticipated Contribution ? |
| Name **Dr Joseph Odartey Cruickshank** |
| Position/Title Consulting Engineer | University/Institution: General Electric Company Ltd |
| Tel. # | Email jcruiks@aol.com |
| Expertise: Advanced Technology Organization  |
| Anticipated Contribution ? |
| Name **Prof Johnson Asumadu** |
| Position/Title | University/Institution Western Michigan University, USA |
| Tel. # +(269) 276-3147 | Email: johnson.asumadu@wmich.edu |
| Expertise |
| Anticipated Contribution |
| **Name Prof Muyiwa Sam Adaramola** |
| Position/Title | University/Institution Renewable Energy Group |
| Tel. # +47-67 23 1793 | Email muyiwa.adaramola@nmbu.no |
| Expertise: Renewable Energy |
| Anticipated Contribution |

## 4.4 Institutional Impact

KEEP is expected to have a positive institutional impact through the following activities:

* GAP analysis to align engineering postgraduate programs with national development agenda and industry needs.
* More applied research designed and executed with sector partners. The support from the KEEP will be used to strengthen academia industry linkage to generate the needed applied research to industries more competitive. It is expected that the cooperation with industry will help establish endowment fund to support postgraduate education and make the project financially sustainable.
* The KEEP will help enhance innovation and research and position the College as a top Engineering College in Arica in line with the strategic plan of the University.
* It will also position the College to attract funding from our development partners.

## 4.5 Incentive Structures and Mechanisms

The incentive structures for staff involved in the project (faculty, administration, management) are as follows:

* Opportunities for staff exchange for research and teaching
* Opportunities for staff exchange for supervision and joint publications
* Opportunity for skills and knowledge upgrading;
* Better teaching and research environment and opportunities;
* Higher turnout of publications through write shops and higher number of PG students;
* Opportunities for participating in conferences and placements schemes; etc.

## 4.6 Sustainability

The sustainability of KEEP refers to the ability of the project to continue beyond the initial project period where the government has supported with College with a grant. To achieve sustainability, KEEP will focus on the following:

* Financial sustainability
* Regional outreach strategy to attract international students from the sub-region

### **4.6.1 Financial Sustainability**

The plan for achieving financial sustainability is to use quality of education and research that will be produced from the project to leverage funding through the following sources:

* Endowment funds for post graduate education and research from benefactors
* Research grants from industry and government
* Contract research from industry
* Tuition fees from students
* Leveraging on the Alumni to raise funding for postgraduate education

Currently GNPC has given the college funding to establish research chair for Petroleum Engineering for four years. Tullow Ghana Limited has also made funding available to support both undergraduate and post graduate students in the form of scholarships and bursaries.

Discussions have been made with Ghana Gas, Kosmos Energy and Volta River Authority (VRA) for funding to support scholarships and initial signs look promising to support the College of Engineering in the area of postgraduate education and research.

### **4.6.2 Regional Outreach Strategy**

The KEEP regional outreach strategy will be based on the following

* Leverage of the ACE Impact network in the subregion to advertise our programmes.
* Identify strategic academic partners in the subregion who will arrange for us to interact and shortlist potential postgraduate students from their institutions.
* To initiate a scholarship scheme for brilliant PhD female students from institutions in the sub-region.
* To organize regular meetings with our undergraduate regional students and encourage them to consider postgraduate after their undergraduate education.
* To use our regional undergraduate students to advertise our KEEP programmes
* Using our international alumni connection/network.
* Regional outreaches to our strategic academic partners who will organize for us to make presentations to potential KEEP students
* To use Social media outreach/presence.

## 4.7 Roles and Responsibilities of KEEP Management Team

###

### **4.7.1 The Project Leader**

Prof. Kwabena Biritwum Nyarko is the Project Leader and will be responsible for providing leadership and implementing programmes in line with the project and approved by the College Board. This position conforms to the existing arrangements in KNUST for management of project activities. The Project Leader will be supported by a deputy and two Project staff (Project Manager and Project Accountant)

The key management roles of the Project Leader are:

* Developing activities in consultation with the Project Advisory Board and the Provost to strengthen the quality of postgraduate education at the College.
* Implementing activities to raise quality of education and research to impact more beneficiaries through networking with other higher education institutions through: (a) partnerships with ACEs and other institutions and (b) partnerships with existing thematic networks in research and training.
* Take initiative to undertake outreach activities including outreach to academic and industry partners to ensure the linkages between degrees offered and the labour market in ways that foster development impact.
* Be responsible for coordinating procurement, maintaining project financial accounts according to project requirements and implementing the ACEs Project’s monitoring and evaluation plan, information and communication with Advisory Committee regarding the project progress,
* Oversee, contribute to, support dissemination of research outputs to partners and interested parties.
* Oversee and contribute to project activities, and prepare annual work plans and annually implement the plan
* Coordinate and provide assistance to other institutions implementing project components,

### **4.7.2 The Deputy Project Leader**

Dr. Jerry John Kponyo will be the Deputy Project Leader. He will be responsible for the following:

* See to the day-to-day implementation of the project activities. Will assist the Project Leader to implement details activities found in the action plan.
* Will assist the Project Leader to network with other institutions within the country and sub-region.
* Will assist the Project Leader to undertake outreach activities including outreach to academic and industry partners,
* Will coordinate the construction of postgraduate research building.
* Oversee the implementation of the environmental management plan
* Coordinate the academic, partnership, marketing and innovations activities.

### **Research Programmes Coordinator (MPhil/PhDs)**

Dr. Mrs. Helen Essandoh will be the Research Programmes Coordinator. She will be responsible for the following:

* Assist in the development of teaching, training and research strategies in pursuit of KEEP vision.
* Assist in coordinating all PhD academic programs in the KEEP.
* Prepare and submit required documentation of courses for university, national and international accreditation processes.
* Perform the functions of a Quality Assurance Officer.
* Responsible for the custody of students’ documentation, results and outputs of KEEP activities and reporting.
* Organize and report on students’ evaluation of courses/lecturers and laboratory/practical/internship sessions.
* Supervise the creation and maintenance of document repository of PhD courses, training manuals and other materials of the Centre.
* Supervise library activities and provide periodic reporting to leadership.
* Coordinate with all departmental programme coordinators to ensure smooth and seamless delivery of courses, processing and auditing of results.
* Assist to produce a platform for tracer studies for KEEP alumni.

### **MSc. Programmes Coordinator**

Dr. Henry Nunoo Mensah will be the MSc Programmes Coordinator. He will be responsible for the following:

* Assist in the development of teaching, training and research strategies in pursuit of KEEP vision.
* Liaise with all departmental coordinators of academic programmes to be offered by the Centre.
* Coordinate/prepare and ensure the submission of required documentation of MSc. Programmes for university, national and international accreditation processes.
* Perform the functions of a Quality Assurance Officer for all MSc programmes.
* Responsible for the custody of MSc students’ documentation, results and outputs of Centre activities; assets management, and reporting.
* Organize and report on students’ evaluation of courses/lecturers and laboratory/practical/internship sessions.
* Supervise the creation and maintenance of document repository of MSc courses, training manuals and other materials of the Centre.
* Supervise library activities and provide periodic reporting to leadership.
* Coordinate with all departmental programme coordinators to ensure smooth and seamless delivery of MSc courses, processing and results and auditing of results.

### **ICT and Marketing Coordinator**

Dr. Daniel Opoku will coordinate with the ICT specialist to develop, host and daily maintain and update the project website. He will be responsible for the following:

* Liaise with Leadership to provide accurate and timely information about the Centre through the KEEP website and other platforms.
* Assist to develop strategies to recruit students for postgraduate programmes and short courses and support the execution.
* Act as a Public Relations Officer with the strong desire to connect KEEP with larger beneficiary community through marketing and advertising.
* Determine the information needs of stakeholders and inform them of Centre activities of relevance.
* Create, schedule, organize and promote outreach activities and special events.
* Assist to engage, promote and strengthen relationships between regional/industry and academic partners of KEEP and the University.
* Support the digitization of lecture material and development of digital teaching tools for training and education as part of KEEP activities.
* Develop and roll out communication strategy of the Centre in alignment with KNUST’s Communication Policy.
* Undertake other tasks assigned to him/her by the leadership of KEEP.

### **Academia-Industry Partnerships Coordinator**

Dr. David Ato Quansah will be responsible for the following:

* Assist the project leader to identify and participate in planned activities for strengthening and managing partnerships for mutual benefit.
* Facilitate efficient linkage and communication among sectorial partners.
* Initiate the conduct of stakeholder needs assessment to inform course content research.
* Identify partnership challenges for the attention and resolution of Centre Management team.
* Engage and secure internship placement for staff and students in industry and document.
* Support any new initiatives that may evolve through implementation of KEEP towards improved partner relationships, trust building, policy development, research and outreach.
* Support dissemination of research output and proven technical packages that can transform the economic livelihoods of communities.
* Assist in the preparation of proposals and consultancy reports for KEEP outreaches.
* Assist to produce a platform for tracer studies for KEEP alumni.
* Undertake other tasks assigned to him/her by the leadership of KEEP.

### **Project Accountant**

The Project Accountant will be responsible for the following:

* Prepare budget and budgetary controls and cash flow forecast to assist management in decision-making
* Liaise with World Bank Country team in Ghana and AAU for funds request and periodic financial reporting
* Prepare monthly actual financial analysis, quarterly accruals and annual financial reports to the funding agency
* Monitor petty cash management and prepare returns on all advanced funds and expenses
* Assist with procurement in accordance with project requirements and KNUST
* Prepare bank reconciliation statement on monthly basis and update project assets register
* Prepare annual accounts for auditing and publish on the centre's website
* Provide sound financial management and engage with students, researchers and partners for the smooth running of project activities
* Liaise with the project manager and monitoring and evaluation personnel to provide advice on project risk (financial health)
* Link up with the office of Grants and Research (OGR) and entre relevant project financial information into the Grants Accounts Management system (GAMS)
* Advise on priorities for the achievement of project deliverables
* Provide general assistance in relation to financial management to the Centre leader

### **Project Manager**

The Project Managerwill be responsible for the following:

* Will assist the Deputy Project Leader to coordinate project activities according to project requirements,
* Assist information and communication with project progress partners,
* Assist in coordinating placement of students for internship programme and student/staff exchange programme,
* Keep all records on the project and assist in reporting on the project,
* Will assist the Project Leader in implementing the ACE’s Project’s Monitoring and Evaluation Plan,
* Information and communication with Advisory Committee regarding the project progress,
* Assist in the documentation and procedure for international accreditation.
* Link up with the office of Grants and Research (OGR) and entre relevant project information into the Research Management Information System (ReMIS)
* Ensure regular update of Centre activities and results for the Centre’s website
* Maintain records and documentation for the monitoring and evaluation of the project

### **Quality Assurance and Innovations Coordinator**

Dr. Kwaku Adjei Amaning will be the Quality Assurance and Innovations Coordinator. His roles and responsibilities are as follows:

* Work with KEEP leadership to create an environment to harness innovative ideas within KEEP and ultimately in College of Engineering
* Establish a framework for supporting the development of innovative ideas within KEEP/COE
* Coordinate all innovation activities under KEEP.
* Work towards the establishment of a business incubator for start-ups under KEEP.
* Develop activities within KEEP students on innovation and entrepreneurship.
* Work with the Project Leadership and Industrial Partnership Coordinator to secure funding for the KEEP Innovation Challenge.
* Ensure all programmes are complying with NAB standards.
* Work with the Project Leadership towards International Accreditation of selected programmes.
* Work with the University Quality Assurance and Planning Unit to ensure all programmes under KEEP comply with Quality Assurance standards of the University.

### **Monitoring and Evaluation Officer**

Dr. Mrs. Eunice Adjei shall be responsible for monitoring and evaluation. She will be responsible for the following:

* Be responsible for measuring, monitoring and evaluating. The Monitoring and Evaluation Specialist (M&E Specialist) will be responsible for measurement, monitoring and evaluating KEEP’s activities in line with the requirements/guidelines/formats/standards of the World Bank and the Association of African Universities (AAU).
* Responsibilities will include providing assistance to the Project Manager in monitoring and documenting overall M&E and learning needs of KEEP and will spearhead the development and timely delivery of technical reports.
* Support the creation of a database and documentation for results and outputs (enrolment, internships etc).
* Maintain documentation and prepare reports periodically on students’ evaluation of courses/lecturers and laboratory/practical sessions to Leadership.
* Supervise regular data collection of KEEP’s activities and ensure data quality by verifications and validations.
* Record, manage and preserve monitoring and evaluation data in a secure and accessible way.
* Analyze and discuss findings based on regular monitoring data.
* Provide technical support on M&E and evidence-based recommendations relevant to the World Bank and AAU.
* Develop an internal project monitoring plan.
* Coordinate data collection against agreed indicators.

## 4.8 Environment Safeguards

The environmental safeguards document is presented in This ACE project is a low-risk minimal civil works involving construction of an office building, class rooms and laboratories. This project's environmental management plan (EMP) consists of set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. This plan also includes the actions needed to implement these measures.

The EMP checklist has the following three sections:

Part 1 includes a descriptive part that characterizes the project, specifies institutional and regulatory aspects, describes technical project content, outlines any potential need for capacity building and briefly characterizes the public consultation process.

Part 2 includes a screening checklist of potential environmental and social impacts, where activities and potential environmental issues can be checked in a simple Yes/No format.

Part 3 contains a simple monitoring plan to enable the Contractor as well as authorities and the World Bank specialists to monitor implementation of environmental management and protection measures and detect deviations and shortcomings in a timely manner.

## 4.9 Sexual Harassment Policy

The Academic Board of KNUST has approved an Anti-Sexual Harassment Policy of the University which seeks to make the University environment a safe place for learning and research. The project shall adhere to these principles and values. The policy will be available on the project website ([www.keep.knust.edu.gh](http://www.keep.knust.edu.gh))

# PERFORMANCE MONITORING

The results framework for monitoring and evaluation of the project is shown in Table 9. It covers 7 indicators which are:

* Indicator 1a: Number of regional and national students (disaggregated) enrolled in Master, PhD,
* Indicator 2: Number of internationally accredited education programs
* Indicator 3: Number of Students /faculty with at least 1month internship in a company or a local institution relevant to their field/ sector
* Indicator 4: Amount of externally generated revenue
* Indicator 5: Number of newly established or substantially revised curricula
* Indicator 6: Programme Implementation team meetings with openly disclosed minutes
* Indicator 7: Annual disclosed unqualified external financial audit, with ACE annual budget

The college has a database of all its postgraduate programmes with details on: title, level (PhD, Masters, etc.), type of accreditation, date of accreditation, expiry of accreditation and accrediting agency/ institution. The source of information for monitoring and evaluation of the project will be from the ACE project database that will be established with the following information:

* Students information containing the bio-data, full contact information, programs (indicating MSc or PhD), nationality and gender of all students enrolled in the courses that form part of the ACE Project.
* Partnerships activities with other universities and industry containing information on internships (beneficiary students, name of host institutions, start and end dates for each student/faculty, reports), research grants secured from industry, activities carried out with industry etc.
* Accreditation of program containing information on the type of international accreditation undertaken; Gap assessment certified /undertaken by an external accreditation agency; Self-evaluation undertaken following a satisfactory international standard (agreed as part of the performance agreement)
* Externally generated revenue for the project.
* Meeting minutes which will also be openly disclosed minutes (on the Project´s Website). A tracking system is to be established for tracking meetings held. Date, time and duration of the meeting as well as participant list and notes of the meeting is to be made available on a public site (e.g. the project website).
* Financial report and audit report

Table 7: Monitoring and Evaluation Plan



# BUDGET OVERVIEW FOR ENTIRE PROJECT PERIOD

The budget overview for the entire project period is shown below in Table 8.

Table 8: Indicative Budget for the KEEP (2019 – 2023)

|  |  |  |
| --- | --- | --- |
|

|  |
| --- |
| **Expenditure Category** |
|

 | **Estimated Costs in (US$)** |
| **YR 1** | **YR 2** | **YR3** | **YR 4** | **YR5** | ***Total*** | ***% of Total Budget*** |
| **A: Budget by Activity Plan** |
| **Action Plan 1:** Strong focus on postgraduate education with affirmative action on females and non-national students |  809,213  |  279,221  |  419,760  |  415,000  |  360,000  |  **2,283,194** | **41**  |
| **Action Plan 2**: Improve learning and teaching environment |  470,000  |  1,377,000  |  |  |  |  **1,847,000**  |  **34** |
| **Action Plan 3**: Enhance Applied Research, Innovation and Entrepreneurship |  54,000  |  39,000  |  54,000  |  39,000  |  54,000  | **240,000**  |  **4**  |
| **Action Plan 4**: Improve governance and administration of the ACE institution |  114,806  |  100,000  |   100,000  |   100,000  |  100,000  |  **514,806**  |  **9**  |
| **Action Plan 5**: Management and Visibility |  23,000  |  23,000  |   23,000  |  23,000  |  23,000  |  **115,000**  |  **2**  |
| **SUB-TOTAL** | **1,471,019** |  **1,818,221**  |  **596,760**  |  **577,000**  |  **537,000**  |  **5,000,000**  |  **90** |
| **Contingency (10% of total Cost)** |  **147,102**  |  **181,822**  | **59,676** | **57,700** |  **53,700**  |  **500,000**  | **10** |
| **GRAND-TOTAL** |  **1,618,121**  |  **2,000,043**  |  **656,436**  |  **634,700**  |  **590,700**  |  **5,500,000**  | **100** |

# DETAILED ACTIVITY SHEETS

 **Target DLI: DLI 1** Readiness

 **Timeframe:** Quarter 1, 2 and 3, and 4 2019

 **Activity: 1.1** Set-up Institutional Framework for the Commencement of ACE

 **Sub-Activity/Task: 1.1.1** Put in place operational manuals for ACE administration: procurement, financial management, monitoring and evaluation (M&E).

|  |  |
| --- | --- |
| RESULT | A working operation manual |
| ACTIVITY | Put in place operational manual for ACE administration: procurement, financial management, M&E |
| OUTPUT | * Draft procurement management operational manual
* Draft financial management operational manual
* Draft M&E operational manual
 |
| OUTPUT INDICATOR* Submission of procurement operational manual to RFU
* Submission of financial management operational manual to RFU
* Submission of monitoring and evaluation (M&E) operational manual to RFU
 | SOURCE OF VERIFICATION* Approved procurement operational manual
* Approved financial management operational manual
* Approved M&E operational manual
 |
| IMPLEMENTATION MILESTONES | * Draft Procurement, Financial Management and M&E operational manual (OM) ready by 15th May 2019
* OM revised and ready for approval by 30th June 2019
* OM approved by 15th September 2019
 |
| PROCUREMENT | Consultancy (optional)  |
| RESPONSIBILITY FOR IMPLEMENTATION | Project-leader, KNUST procurement officer, College finance officer, quality assurance (QA) officer and M&E officer (both from ACE team and from the University). |
| DURATION: 9 months | Commencement: January 2019 | Completion:September 2019 |
| PRIMARY CONSTITUENTS: * ACE team
* Project Leader
 | PARTICIPANTS: ACE teamUniversity procurement officeUniversity finance teamUniversity QA and M&E team |
| ASSUMPTIONS | * OM will be made in collaboration with relevant university units
* Relevant staff (including from central management) interested in this and willing to fulfil the task
* Specific measurement to eliminate risk of corruption and improve overall efficiency of procurement and financial management is included in the operational manual (as excellence is better that the normal university standard)
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | ACE budget for the activity, no partner budget for this  |
| Budget Line Analysis | 1stQtr-2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Printing of operation manuals |  |  | $2,000 |  |  |  | **$2,000** |
| **TOTALS** |  |  | **$2,000** |  |  |  | **$2,000** |

 **Target DLI: DLI 1.0** Readiness (Basic and Full)

 **Timeframe:** Quarter 2 to 4, (April to December 2019)

 **Activity: 1.1** Set-up Institutional Framework for the Commencement of ACE

 **Sub-Activity/Task: 1.1.2** Operationalize the administrative manual for ACE administration: procurement, financial management, M&E and designate ACE team members

|  |  |
| --- | --- |
| RESULT | A working administrative manual and ACE Team |
| ACTIVITY | Operationalize the administrative manual for ACE administration: procurement, financial management, M&E and designate ACE team members |
| OUTPUT | Administrative manual covering the following areas;* Procurement management
* Financial management
* Monitoring and Evaluation

Designate ACE team members to the following portfolios* Project Lead
* Deputy Project Lead
* Partnership Coordinator
* Administrative Assistant

Inauguration of Boards* International Scientific Advisory Board
* Sector Advisory Board

Project Manager and Accountant Appointed |
| OUTPUT INDICATOR* Submission of administrative manual
* Submission of appointment letters of ACE core team members
* Submission of appointment letters of Board members
 | SOURCE OF VERIFICATION* Approved administrative manual
* Appointment letters
 |
| IMPLEMENTATION MILESTONES | * Draft administrative manual ready by 30th May 2019
* Administrative manual revised by project team and partners by 30th June 2019
* Administrative manual ready for approval by 1st July 2019
* Administrative manual approved by 1st September 2019
* Formal appointment of ACE core team members by 30th April 2019
* Advertise the position of Project Manager and Accountant by 30th May 2019
* Appoint Project Manager and Accountant by 30th July 2019
 |
| PROCUREMENT | Services  |
| RESPONSIBILITY FOR IMPLEMENTATION | * Project Lead, Director of procurement, finance officer, University management, Office of Grants and Research Director, University HR Office
 |
| DURATION: 9 months | Commencement: April 2019 | Completion:December 2019 |
| PRIMARY CONSTITUENTS: * University Management
* University HR Office
* ACE team
 | PARTICIPANTS: ACE teamUniversity procurement officeUniversity finance team |
| ASSUMPTIONS | * Administrative manual will be developed in collaboration with relevant university units
* Members of the team will be objective in the development of the manual to remove all forms of corruption
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | ACE budget will be used to accomplish this deliverable  |
| Budget Line Analysis | 1stQtr-2019 | 3rd and 4th Qtrs-2019 | 2020 | 2021 | 2022 | 2023 | **Total** |
| 1 | Advertisement for Project Staff |  | $2,000 |  |  |  |  | **$2,000** |
| 2 | Interview cost (Snacks & lunch) |  | $1,000 |  |  |  |  | **$1,000** |
| 3 | Sitting allowance (interview panel) |  | $2,000 |  |  |  |  | **$2,000** |
| 4 | Staff Salaries & Benefits |  | $12,000 | $48,000 | $52,800 | $58,080 | $37,268 | **$208,148** |
| 5 | Staff training & development |  | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 | **$25,000** |
| **TOTALS** |  | **$5,000** | **$5,000** | **$50,000** | **$50,000** | **$50,000** | **$398,148** |

  **Target DLI: DLI 1.0** Readiness (Full)

 **Timeframe:** Quarter 1 to 2, (January to June 2019)

 **Activity: 1.2** Project Management Training

 **Sub-Activity/Task: 1.2.1** Train and obtain project management certification for at least one core team member

|  |  |
| --- | --- |
| RESULT | Project management certification for one core team member |
| ACTIVITY | Training in project management  |
| OUTPUT | One team member trained in project management |
| OUTPUT INDICATOR* Certificate of award in Project management
 | SOURCE OF VERIFICATION* Hard copies of project management certificates
 |
| IMPLEMENTATION MILESTONES | * Identification of institution for training 30th April 2019
* Selection of candidate(s) for training by 30th April 2019
* Completion of training by 30th May 2019
 |
| PROCUREMENT | Consultancy |
| RESPONSIBILITY FOR IMPLEMENTATION | Project Leader  |
| DURATION: 7 months | Commencement: January 2019 | Completion:July 2019 |
| PRIMARY CONSTITUENTS: * ACE team
 | PARTICIPANTS: Project Leader, Deputy Project Leader |
| ASSUMPTIONS | * A credible training institute will be identified
* Selected candidate(s) will be available to attend training
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | ACE budget will be used to accomplish this deliverable  |
| Budget Line Analysis | 1stQtr-2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Airline Ticket |  | $2,000 |  |  |  |  | **$2,000** |
| 2 | Course Fee |  | $2,000 |  |  |  |  | **$2,000** |
| 3 | International DSA |  | $3,000 |  |  |  |  | **$3,000** |
| **TOTALS** |  | **$7,000** |  |  |  |  | **$7,000** |

 **Target DLI: DLI 1.0** Readiness (Full)

 **Timeframe:** Quarter 2, (April to June 2019)

 **Activity: 1.3** Design and Host a functioning website

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Function website for Project |
| ACTIVITY | Design and Host a functioning website |
| OUTPUT | Website online and working |
| OUTPUT INDICATOR* Functioning website
* Number of hits or views
 | SOURCE OF VERIFICATION* Website link
 |
| IMPLEMENTATION MILESTONES | * Selection of theme 15th April 2019
* Finalizing of content for website 17th April 2019
* Upload of relevant documents such as student handbook and policies 24th May 2019
* Launch of website 30th June 2019
 |
| PROCUREMENT | Consultancy |
| RESPONSIBILITY FOR IMPLEMENTATION | ICT and Communication Manger |
| DURATION:  3 months | Commencement: April 2019 | Completion:June 2019 |
| PRIMARY CONSTITUENTS: * General populace
 | PARTICIPANTS: Deputy Project Leader, University Information Technology Services (UITS) |
| ASSUMPTIONS | * UITS will work with our timelines
* Availability of content
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | ACE budget will be used to accomplish this deliverable  |
| Budget Line Analysis | 1stQtr-2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Cost of designing website |  |  |  | $500 |  |  | **$500** |
| 2 |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |
| **TOTALS** |  |  |  | **$500** |  |  | **$500** |

 **Target DLI: DLI 1.0** Readiness (Full)

 **Timeframe:** Quarter 2, 4(All years)

 **Activity: 1.3** Inauguration of Advisory Boards and meetings

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Scientific Advisory Board and Industrial Advisory Board constituted |
| ACTIVITY | Inauguration of advisory board and  |
| OUTPUT | Advisory boards duly constituted |
| OUTPUT INDICATOR* Submission of report on inauguration
 | SOURCE OF VERIFICATION* Reports
* Minutes of advisory board meetings
 |
| IMPLEMENTATION MILESTONES | * Development of terms of reference for advisory boards
* Letter of intent from board members to serve
* Setting date for inauguration
* Holding first meeting 30th August 2019
* Hold Second meeting January 2020
* Hold third meeting by 30th June 2020
 |
| PROCUREMENT |  |
| RESPONSIBILITY FOR IMPLEMENTATION | Deputy Project Leader |
| DURATION:  56 months | Commencement: April 2019 | Completion: December 2023 |
| PRIMARY CONSTITUENTS: * University Management
* Provost of College of Engineering
* Student Representative
* Project Leader
 | PARTICIPANTS: ACE Team, Advisory board members, University Management and URO, Provost Office |
| ASSUMPTIONS | * Advisory board members will agree to serve
* No conflict of interest
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | ACE budget will be used to accomplish this deliverable  |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | **Member’s sitting allow- Sectoral Advisory Board** |  |  |  | $1,400 | $2,800 | $8,400 | **$12,600** |
| 2 | Meeting Snacks & Lunch |  |  |  | $400 | $800 | $2,400 | **$3,600** |
| 3 | Transport & DSA for KEEP Staff |  |  |  | $5,000 | $5,000 | $15,000 | **$25,000** |
| 4 | **Member’s sitting allow- Intl Scientific Advisory Board** |  |  |  | $1,400 | $2,800 | $8,400 | **$12,600** |
| 5 | Meeting Snacks & Lunch |  |  |  | $400 | $800 | $2,400 | **$4,000** |
| 6 | Transport & DSA for KEEP Staff |  |  |  | $5,000 | $5,000 | $15,000 | **$3,600** |
| 7 | Air tickets & DSA for Intl Scientific Advisory Board |  |  |  | $1,400 | $2,800 | $8,400 | **$25,000** |
| **TOTALS** |  |  |  | **$13,600** | **$17,200** | **$51,600** | **$82,400** |

 **Target DLI: DLI 3.0** Quantity of Students with Focus on gender and regionalization

 **Timeframe:** Quarter 1 2019 to Quarter 2 2020, (March 2019 to June 2020)

 **Activity: 3.1** Identify and Sign MoU with strategic partners

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | A network of strategic partners established |
| ACTIVITY | Identify and Sign MoU with strategic partners |
| OUTPUT | Signed MoU with Partners |
| OUTPUT INDICATOR* Signed MoU
* Partnership letters
 | SOURCE OF VERIFICATION* Signed MoU’s
* Partnership Letters
 |
| IMPLEMENTATION MILESTONES | * Meeting with Association of Ghana Industries Kumasi Branch April 31st, 2019
* Meeting with Association of Ghana Industries Accra Branch July 31st, 2019
* Meeting with Ghana Institution of Engineering July 31st, 2019
* Partners Meeting including Regional Partners 15th August 2019
 |
| PROCUREMENT |  |
| RESPONSIBILITY FOR IMPLEMENTATION | Project Lead, Partnership Coordinator, Project Manager |
| DURATION:  15 months | Commencement: March 2019 | Completion:June 2020 |
| PRIMARY CONSTITUENTS: * Industries
* Higher Educational Institutions in the Sub Region
 | PARTICIPANTS: Alumni, industrial partners |
| ASSUMPTIONS | * Willingness of Industries and Regional Higher Educational Institutions to partner with the College
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | ACE Funding |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Meetings Snacks & Lunch |  |  | $1,500 |  | $1,500 | $4,500 | **$7,500** |
| 2 | Transport for participants |  |  | $5,000 |  | $5,000 | $15,000 | **$25,000** |
| 3 | Transport & DSA for KEEP Mgt– Regional meetings |  |  | $20,000 |  | $20,000 | $60,000 | **$100,000** |
| **TOTALS** |  |  | **$26,500** |  | **$26,500** | **$79,500** | **$132,500** |

 **Target DLI: DLI 3.0** Quantity of Students (DLI 3.1 PhD students & DLI 3.2 Master students)

 **Timeframe:** Quarter 3, 2019; Quarter 3, 2020; Quarter 3, 2021; Quarter 3, 2022; Quarter 3, 2023

 **Activity: 3.2** Recruit MSc and PhD students for all programmes

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | PhD and MSc students admitted into programmes as per targets |
| ACTIVITY | Recruit MSc and PhD students for all programmes  |
| OUTPUT | Students admitted into all programmes under ACE project |
| OUTPUT INDICATOR* Copy of Advertisements
* Approved interview guidelines
* Interview reports
 | SOURCE OF VERIFICATION* Hard copies of call for applications
* Websites adverts
* Hard copies of selection criteria documents
* Admission letters
 |
| IMPLEMENTATION MILESTONES | * Draft call for applications 28th February each year
* Launch call for applications 1st March each year
* Development and approval of selection procedures 1st April each year
* Constitute admissions committee 1st May each year
* Review and short-listing of applicants 7th May each year
* Notification of admission to international students 15th May each year
* Selection interview to national applicants 14th June each year
* Notification of admission to national students 30th June each year
 |
| PROCUREMENT | Services  |
| RESPONSIBILITY FOR IMPLEMENTATION | Academic coordinators, Head of Departments for programmes under ACE Project, School of Graduate Studies, Quality Assurance and Planning Unit, University Relations Office  |
| DURATION: All years (Project duration) | Commencement:February each year  | Completion:June each year |
| PRIMARY CONSTITUENTS: Prospective international and national students  | PARTICIPANTS: Relevant university staff. Ultimately national and regional students |
| ASSUMPTIONS | Availability of qualified youthPartners will recommend prospective candidatesAvailability of funding Stability in countryStability of academic environment (no strikes)  |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Media advertisement |  | $2,700 |  |  | $2,700 | $8,100 | **$13,500** |
| 2 | Meetings Snacks & Lunch |  | $1,000 |  |  | $1,000 | $3,000 | **$5,000** |
| 3 | Students ‘Fees, accommodation & Stipend  |  |  |  |  | $182,368 | $547,103 | **$729,471** |
| 4 | Students’ Research Grants |  |  |  |  | $159,091 | $477,272 | **$636,363** |
| **TOTALS** |  | **$3,700** |  |  | **$345,159** | **$1,035,475** | **$1,384,334** |

 **Target DLI: DLI 3.0** Quantity of Students

 **Timeframe:** July 2019 to June 2023

 **Activity: 3.4** Regional Outreach and Marketing

 **Sub-Activity/Task: 3.4.1** Develop educational resources for outreach and marketing

|  |  |
| --- | --- |
| RESULT | Develop a regional marketing and outreach strategy |
| ACTIVITY | Regional Outreach and Marketing |
| OUTPUT | Electronic and print materials developed for regional outreach and marketing |
| OUTPUT INDICATOR* Approved outreach and marketing action plan document
* Student handbook plus brochures developed
* Documentary filmed
 | SOURCE OF VERIFICATION* Hard copies of approved outreach and marketing research plan
* Hard copies of student and handbook and programme brochures
* Hard copies of short course catalogue
* Documentary on website
 |
| IMPLEMENTATION MILESTONES | * Setting up of committee to develop outreach and marketing strategy
* Draft strategy developed
* Strategy approved for implementation
* Design and printing of revised student handbook and programme brochure
* Design and printing of revised short term course catalogue
 |
| PROCUREMENT | Services |
| RESPONSIBILITY FOR IMPLEMENTATION | Project Manager, Academic Co-ordinator, Industrial liaison officer |
| DURATION: 48 months | Commencement:July 2019  | Completion:June 2023 |
| PRIMARY CONSTITUENTS: ACE TEAM  | PARTICIPANTS: sector professionals from regional and national partners, NGOs, Government agencies, private individuals  |
| ASSUMPTIONS | * Availability of new dataset and/or information to revise student handbook and programme brochure
 |
| FINANCIAL IMPLICATIONS/BUDGET LINE | Service |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Printing of Student’s Handbook |  |  |  | $10,000 |  |  | **$10,000** |
| 2 | Video Documentary of KEEP activities |  |  |  |  | $2,000 |  | **$2,000** |
| **TOTALS** |  |  |  | **$10,000** | **$2,000** |  | **$12,000** |

 **Target DLI: DLI 4 Quality of education and Research**

 **Timeframe:** Quarter 1, 2019 to Quarter 4, 2019

 **Activity: 4.1** GAP assessment, Curriculum review, Development of new programmes

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Obtain national and international accreditation for all programmes |
| ACTIVITY | GAP assessment, Curriculum review, Development of new programmes |
| OUTPUT | New programmes, Nationally accredited programmes, Internationally accredited programmes |
| OUTPUT INDICATOR* Revised curriculum
* Self-assessment completed
* Curriculum for new programmes developed
 | SOURCE OF VERIFICATION* Management meetings on accreditation
* Minutes of meeting with NAB
* GAP assessment reports
* New programme report to Planning and resource unit
* Letters to commence new programmes from Quality Assurance and Planning Unit, KNUST
* Letters of accreditation from national and international accreditation agencies
 |
| IMPLEMENTATION MILESTONES | * GAP assessment 30th December 2019
* Curriculum revisions 30th March 2020
* Identification of international accreditation agency 30th April 2020
* Drafting of documents for accreditation 30th June 2020
* Submission of documents for national accreditation 31st August 2020
* Submission of documents for international accreditation 31st August 2020
* New programme commences 31st August 2020
 |
| PROCUREMENT | Consultancy |
| RESPONSIBILITY FOR IMPLEMENTATION | Project Lead, Deputy Project Lead, Academic programmes coordinator, Project Manager, Consultant |
| DURATION: 25 months | Commencement:June 2019  | Completion:August 2021 |
| PRIMARY CONSTITUENTS: Postgraduate students, industrial partners, Ghana Institution of Engineering, Ministry of Employment | PARTICIPANTS: KNUST, ACE Team, National Accreditation Board |
| ASSUMPTIONS | * Programmes will be approved by planning and resource unit and QAPU of KNUST
* A suitable consultant would be found
* Programme will meet NAB standards for accreditation
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Programme Review |  |  |  |  | $10,000 |  | **$10,000** |
| 2 | GAP Assessment |  |  |  |  | $25,000 |  | **$25,000** |
| 3 | Accreditation of Programmes |  |  |  |  | $60,000 |  | **$60,000** |
| **TOTALS** |  |  |  |  | **$95,000** |  | **$95,000** |

 **Target DLI: DLI 4 Quality of education and Research**

 **Timeframe:** Quarter 1, 2019 to Quarter 4, 2019

 **Activity: 4.2** Staff development and skills training

 **Sub-Activity/Task: 4.2.1**

|  |  |
| --- | --- |
| RESULT | Enhanced faculty capacity to conduct applied research addressing industry and sectoral needs |
| ACTIVITY | Upgrade faculty research capacity and expertise in relevant fields  |
| OUTPUT | Number of staff trained (PhDs, internships, short courses, etc.) |
| OUTPUT INDICATOR* Number of staff trained
 | SOURCE OF VERIFICATION* Registration documents
* Industry communication
* Certificates
 |
| IMPLEMENTATION MILESTONES | * First batch of 2 staff without PhD enrolled in sandwich programmes by 31/08/2019
* Second batch of 2 staff without PhD enrolled in sandwich programmes by 31/08/2020
* Third batch of 2 staff without PhD enrolled in sandwich programmes by 31/08/2021
* Fourth batch of 2 staff without PhD enrolled in sandwich programmes by 31/08/2022
* Fifth batch of 2 staff without PhD enrolled in sandwich programmes by 31/08/2023
* First batch of 2 faculty members sent for research internship at renowned institutions by 31/08/2019
* Second batch of 2 faculty members sent for research internship at renowned institutions programmes by 31/08/2020
* Third batch of 2 faculty members sent for research internship at renowned institutions by 31/08/2021
* Fourth batch of 2 faculty members sent for research internship at renowned institutions programmes by 31/08/2022
* Fifth batch of 2 faculty members sent for research internship at renowned institutions by 31/08/2023
 |
| PROCUREMENT | Services |
| RESPONSIBILITY FOR IMPLEMENTATION | Project leader, Programmes Coordinator |
| DURATION: 56 months | Commencement:March 2019 | Completion:December 2023 |
| PRIMARY CONSTITUENTS: Academic Staff, Technical and Administrative Staff | PARTICIPANTS: College of Engineering Staff |
| ASSUMPTIONS | * Staff are interested in opportunities available (PhDs, short courses, internships).
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Staff enrolled in sandwich programme |  |  |  |  | $30,000 | $120,000 | **$150,000** |
| 2 | Staff enrolled in internship programme |  |  |  |  | $30,000 | $120,000 | **$150,000** |
| **TOTALS** |  |  |  |  | **$60,000** | **$240,000** | **$300,000** |

 **Target DLI: DLI 4 Quality of education and Research**

 **Timeframe:** All years

 **Activity: 4.3** International Conference (ESTE)

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Regional Conference Organized |
| ACTIVITY | Organize Regional Conference |
| OUTPUT | * Number of conferences held
 |
| OUTPUT INDICATOR* Number of abstracts received per conference
* Number of participants attending each conference
 | SOURCE OF VERIFICATION* Book of abstracts
* Conference proceedings
 |
| IMPLEMENTATION MILESTONES | * Organizing Committee Setup
* Conference theme developed and launched
* Call for abstracts launched
* Scientific team constituted
* Abstracts selected
 |
| PROCUREMENT | Services |
| RESPONSIBILITY FOR IMPLEMENTATION | Deputy Project Leader, Project Manager, Project Accountant, Industry liaison coordinator |
| DURATION: 56 months | Commencement:May 2019 | Completion:December 2023 |
| PRIMARY CONSTITUENTS: researchers and practicing, faculty members form partners, postgraduate students | PARTICIPANTS: students, Industry partners, regional partners |
| ASSUMPTIONS | * Researchers would be interested in presenting papers
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 1st Qtr-2020 | 4th Qtr 2020- 2023 | **Total** |
| 1 | Transport & DSA (Local DSA) |  |  |  |  | $15,000 | $60,000 | **$75,000** |
| 2 | Snacks & Lunch |  |  |  |  | $1,000 |  | **$1,000** |
| 3 | KEEP Management & Staff ACE’s conference (Intl DSA) | $20,000 |  | $20,000 |  | $20,000 | $140,000 | **$200,000** |
|  | **TOTAL** | **$20,000** |  | **$20,000** |  | **$36,000** | **$200,000** | **$276,000** |

 **Target DLI: DLI 4 Quality of education and Research**

 **Timeframe:** All year round

 **Activity: 4.4** Regional and International Faculty Exchange Programme

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Improved capacity of faculty to conduct joint research and supervision  |
| ACTIVITY | Regional and International Faculty Exchange Programme |
| OUTPUT | * Number of faculty visits
 |
| OUTPUT INDICATOR* Number of applications for faculty visits
* Number of faculty selected
 | SOURCE OF VERIFICATION* Trip reports
* Inter-institution communications
 |
| IMPLEMENTATION MILESTONES | * Setting committee to draft faculty exchange modality
* Call for applications for faculty exchanges
* Selection of faculty members for exchange
 |
| PROCUREMENT | Services |
| RESPONSIBILITY FOR IMPLEMENTATION | Deputy Project Lead, Project Manager, Applied Research coordinators  |
| DURATION: 54 months | Commencement:July 2019 | Completion:December 2023 |
| PRIMARY CONSTITUENTS: regional and international partners, faculty members, postgraduate students | PARTICIPANTS: ACE Team, regional and international faculty  |
| ASSUMPTIONS | * Interest to participate in exchanges by regional and international faculty members
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Transport & DSA |  |  |  |  | $5,000 | $10,000 | **$15,000** |
| 2 | Snacks & Lunch |  |  |  |  | $,1000 |  | **$,1000** |
|  | **TOTAL** |  |  |  |  | **$6,000** | **$10,000** | **$16,000** |

 **Target DLI: DLI 4 Quality of education and Research through international accreditation, research publications and improved teaching and research infrastructure**

 **Timeframe:** Quarter 2, 2019 to Quarter 3, 2022

 **Activity: 4.5** Civil Works and procurement of teaching and research equipment

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | ACE building completed fitted with state-of-the art equipment and in-use by faculty and students |
| ACTIVITY | * Civil Works and procurement of teaching and research equipment
 |
| OUTPUT | * Procurement plan developed
* Tender for Civil works and laboratory equipment completed
* Contracts awarded
* Vehicles procured
 |
| OUTPUT INDICATOR* Submission of procurement plan
* Submission of tender documents
* Submission of contract documents
 | SOURCE OF VERIFICATION* Approved procurement plan
* Adverts for tender opening meeting minutes
* Tender evaluation meeting minutes
* Hard copy of tender documents
* Hard copy of contract documents
* Reports
* Asserts verification report
* Audit report
 |
| IMPLEMENTATION MILESTONES | * Complete drawings of new CoE postgraduate hub by 31/9/2019
* Initiate procurement of contractors for the building by 31/10/2019
* CoE postgraduate Hub dedicated to postgraduate teaching laboratory, classrooms, computers laboratory, library and other facilities completed by 31/07/2021
* Initiate procurement of research equipment and tools by 31/08/2019
* Call for tender for laboratory equipment 31/08/2019
* Call for tender for vehicles 31/08/2019
* Call for tender for office equipment and furniture 31/08/2019
* Call for tender for teaching equipment, and computers 31/08/2019
 |
| PROCUREMENT | Consultancy |
| RESPONSIBILITY FOR IMPLEMENTATION | Project Lead, Development Office, Procurement Office |
| DURATION: 40 months | Commencement:March 2019  | Completion:August 2022 |
| PRIMARY CONSTITUENTS: ACE Team | PARTICIPANTS: ACE Team, Provost, KNUST Development office, building contractor, Procurement office |
| ASSUMPTIONS | * No delay in procurement process for civil works and equipment
* Limited or no bureaucracies
* Suppliers will supplier goods per schedule
* Availability of funds for payments
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Construct Postgraduate Education and Research Center |  |  |  |  | $974,118 | $200,000 | **$1,174,118** |
| 2 | Purchase 1 number cross country vehicle |  |  |  | $100,000 |  |  | **$100,000** |
| 3 | Purchase one bus (60 seater) |  |  |  | $150,000 |  |  | **$150,000** |
| 4 | Laboratory equipment and consumables |  |  |  |  | $400,000 | $500,000 | **$900,000** |
| 5 | Procurement of teaching equipment, laptops, E-learning facilities,etc  |  |  |  | 35,000 | $100,000 |  | **$135,000** |
| 6 | Procurement of office equipment and office furniture and fittings  |  |  |  | $25,000 |  |  | **$25,000** |
|  | **TOTAL** |  |  |  | **$310,000** | **$1,474,118** | **$700,000** | **$2,484,118** |

 **Target DLI: DLI 5 Relevance of Education and Research through externally generated revenue, internships and**

 **entrepreneurship**

 **Timeframe:** Quarter 2, 2019 to Quarter 3, 2022

 **Activity: 5.2** Faculty and student Internships

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Number of faculty and student with at least one month internship |
| ACTIVITY | Student and Staff Internship |
| OUTPUT | * Increased number of Staff with internship
* Increased number of students with internship
 |
| OUTPUT INDICATOR* Submission RRIF fund
* Submission of patent policy
* Submission of patents of innovations
 | SOURCE OF VERIFICATION* Faculty internship reports
* Students internship reports
 |
| IMPLEMENTATION MILESTONES | * MoUs signed with industry partners by 31/12/2019
* Placement for students in industry will starts by 31/6/2020
* Faculty internship, visiting faculty or Sabbatical positions for faculty started by 31/06/2020
 |
| PROCUREMENT | Service |
| RESPONSIBILITY FOR IMPLEMENTATION | ACE Team, Academic programme coordinator, Academic research coordinator, Project Accountant, Project Manager |
| DURATION: 40 months | Commencement:March 2019 | Completion:August 2022 |
| PRIMARY CONSTITUENTS: ACE Team, postgraduate students, staff, industry partners | PARTICIPANTS: Industry Partners, Staff of CoE |
| ASSUMPTIONS | * Willingness of industry partners to allocate space for internship
* Willingness of staff to participate internship
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Transport & DSA |  | $5,000 |  | $5,000 | $5,000 | $25,000 | **$40,000** |
| 2 | Placement for students in industry |  |  |  |  | $10,000 | $40,000 | **$50,000** |
| 3 | Faculty internship |  |  |  |  | $15,000 | $35,000 | **$50,000** |
|  | **TOTAL** |  | **$5,000** |  | **$5,000** | **$30,000** | **$100,000** | **$140,000** |

 **Target DLI: DLI 5 Relevance of Education and Research through externally generated revenue, internships and entrepreneurship**

 **Timeframe:**

 **Activity: 5.1** Establish CoE Innovation Challenge Fund and identify potential project as start-ups for the Business incubation Centre

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Start-ups ongoing and innovative solutions developed by students of CoE |
| ACTIVITY | * Setup CoE Innovation Challenge Fund
 |
| OUTPUT | * CoE Innovation Challenge Fund established and launched by 30/08/2019
* First call for projects by 31/12/2019
* First start-ups identified for funding by 30/03/2020
 |
| OUTPUT INDICATOR* Number of startups at business incubation
* Number of awards for innovation challenge
 | SOURCE OF VERIFICATION* Call for proposals
* Progress reports
* Reports from business incubator
 |
| IMPLEMENTATION MILESTONES | * Establish Board of Trustees for Fund (31/09/2019)
* Draft of modalities for business incubation
* Draft of modalities for Innovation Challenge Fund
* CoE Innovation Challenge Fund established and launched by 30/11/2019
* First call for projects by 31/12/2019
* First start-ups identified for funding by 30/03/2020
 |
| PROCUREMENT | Service |
| RESPONSIBILITY FOR IMPLEMENTATION | Deputy Project Lead, Project Manager, Project Account, Innovations Coordinator |
| DURATION: 37 months | Commencement:August 2019 | Completion:August 2022 |
| PRIMARY CONSTITUENTS: ACE Project Team, Advisory Board | PARTICIPANTS: Students of CoE, Sector Ministries, Sector professionals, General public |
| ASSUMPTIONS | * Students would be interested to apply
* Proposals submitted would meet criteria
 |
| Budget Line Analysis | 1stQtr 2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Business Incubations / start-ups |  |  |  |  | $30,000 | $40,000 | **$70,000** |
| 2 | Innovation competition and Challenge fund |  |  |  |  | $15,000 | $50,000 | **$65,000** |
|  | **TOTAL** |  |  |  |  | **$45,000** | **$90,000** | **$135,000** |

 **Target DLI: DLI 6 Timeliness and quality of fiduciary management**

 **Timeframe: Quarter 1 – 3, 2019**

 **Activity: 6.1** Setting up of procurement and audit committees, development of workplan, procurement plan, upload of financial reports on website

 **Sub-Activity/Task:**

|  |  |
| --- | --- |
| RESULT | Transparency in management and timely fiduciary management and improved visibility |
| ACTIVITY | Setting up of procurement and audit committees, development of workplan, procurement plan, upload of financial reports on website |
| OUTPUT | * Functioning procurement and audit committee
* Approved procurement plan
* Approved workplan
 |
| OUTPUT INDICATOR* Number of procurement and audit meetings
* Submitted workplan
* Submitted procurement plan
* Number of external audits
 | SOURCE OF VERIFICATION* Meeting minutes of procurement and audit committees
* Audit reports on procurement and financials
* Hard copies of workplan
* Hard copies of procurement plan
* Download links to annual audit and procurement reports plus expenditure
 |
| IMPLEMENTATION MILESTONES | * Setting up of procurement and audit committees
* Draft procurement plan
* Approved procurement plan
* Draft workplan
* Approved workplan
* Upload of procurement and audit reports and financials on website
* External audit report
 |
| PROCUREMENT | Service |
| RESPONSIBILITY FOR IMPLEMENTATION | Deputy Project Lead, Project Manager, Project Accountant, Procurement office, Audit  |
| DURATION: 24 months | Commencement:March 2020  | Completion:August 2022 |
| PRIMARY CONSTITUENTS: ACE TEAM | PARTICIPANTS: ACE TEAM, University management, Director of procurement, University internal auditor, external auditor |
| ASSUMPTIONS | * Buy-in of University management
 |
| Budget Line Analysis | 1stQtr-2019 | 2ndQtr-2019 | 3rdQtr-2019 | 4thQtr-2019 | 2020 | 2021-2023 | **Total** |
| 1 | Meetings Snacks & Lunch |  |  |  | $2,000 | $2,000 | $6,000 | **$10,000** |
| 2 | External Audit Fees |  |  |  | $5,000 | $5,000 | $15,000 | **$25,000** |
|  | **TOTAL** |  |  |  | **$7,000** | **$7,000** | **$21,000** | **$35,000** |