

University of Port Harcourt

Moving towards a more student-centred engineering education



Programme objective | **To improve engineering capacity in sub-Saharan Africa through improving the knowledge, skills and employability of African engineering graduates**

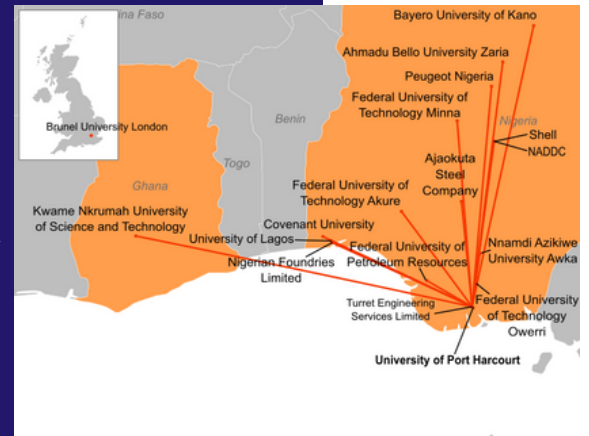
Region | **West Africa**

Introduction

The University of Port Harcourt is located in the city of Port Harcourt in Nigeria, which is an important centre of Nigeria's petroleum industry. As a result, the university has strong ties to the local economy with many engineering graduates finding careers in the oil, gas and automotive sectors. The University of Port Harcourt participated as a hub university in HEP SSA Programme between 2017-19 with the objective of improving the quality of engineering to develop local engineers and solve challenges confronting Nigeria, especially in automotive engineering. The HEP SSA project received a total funding of £138,642.

Spoke universities

- Federal University of Petroleum Resources
- Federal University of Technology Owerri
- Elizade University of Aromokan
- Federal University of Technology Minna
- Niger Delta University of Amasma
- Bayero University of Kano
- Kwame Nkrumah University of Science and Technology
- Ahmadu Bello University Zaria
- Covenant University
- University of Lagos



Industry partners

- Peugeot Automobile Nigeria (PAN) Limited, Kaduna
- National Automotive Design and Development Centre (NADDCC), Zaria, Kaduna State
- AJAOKUTA STEEL COMPANY, Kogi State
- Nigerian Foundries Limited, Otta, Ogun State
- Shell Petroleum Development Company, Port Harcourt
- Turret Engineering Services Limited, Port Harcourt

UK partners

- Brunel University London

Main activities

As part of the project, the partners:

- carried out secondments of academic staff to industrial partners – originally 8 secondments were planned, but 16 were ultimately organised,
- organised a series of knowledge sharing workshops, attended by a total audience of 880 of which about 70% were undergraduate and postgraduate students,
- gathered student feedback on the curriculum during the workshops, which enabled subsequent improvement and development of the engineering curriculum,

- facilitated finding **internships for students** – an estimated 200 students were able to find internships enabling them to secure jobs. Furthermore, students also obtained practical experience in terms of working with scientific equipment, such as emission analysis.

The secondments and knowledge sharing workshops are considered the most successful activities of the project as they have resulted in **enhanced teaching at the University of Port Harcourt**. As part of the project, unanticipated **visits to the UK** were also organised, giving visiting academics the opportunity to view and interact with research equipment at Brunel University and the University of Birmingham. The visits were regarded as very positive experiences by the involved academics, motivating many to pursue grant funding for similar projects themselves.

Results and impact

"One of the key takeaways was the realisation that the university's mode of teaching had to be reviewed to make it more student-centred as opposed to teacher centred. This meant introducing more training elements, prioritising student engagement, and improving modes of assessment, all of which were new to engineering education at the University of Port Harcourt."
– Mohammed Ojapah, Hub University Leader

As a result of the HEP SSA project, **lecturer training on the design and delivery of an outcome-based engineering curriculum was implemented**. The secondments have also resulted in meaningful impact as all staff members of the Mechanical Engineering Department obtained industry experience, which they were able to apply into the curricula, **enhancing the quality of teaching**. Student feedback highlighted these positive changes in the curriculum, mentioning more interactive and/or practical elements in the style and methods of teaching. Furthermore, the end-of-year projects of engineering undergraduates are more structured towards addressing local challenges, and some of the university's students are still using the acquired pieces of equipment, software and books from the HEP SSA project.

Sustainability of the results

The relations established with industry partners have **been maintained beyond the project lifetime**, and they continue to provide internship opportunities for students and input to the design of local projects. The University of Port Harcourt was **successful in attracting follow-up funding** on the back of the project from the HEP SSA programme. It also has plans to **continue the international collaboration established with the UK partners** to seek other funding opportunities and to develop two centres of excellence: one for automotive and renewable energy technology and another one for engineering skills (quality teaching, learning and student engagement). The centres would be established in collaboration with local industry to award MSc and PhD degrees and train staff whilst providing **access to engineering facilities and equipment**.



Source: University of Port Harcourt