



Agricultural Engineering Education in Ghana

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OUTLINE

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INTRODUCTION

- Agricultural and Biosystems Engineering (ABE) tertiary education is to train professional agricultural engineers.
- It cover courses in the basic engineering sciences, agriculture and the humanities.
- The program current runs in four (4) traditional universities:
 - Kwame Nkrumah University of Science and Technology, Kumasi (KNUST)
 - University of Ghana, Accra (Legon)
 - University of Development Studies, Tamale (UDS) and
 - University of Energy and Natural Resources, Sunyani (UENR)

INTRODUCTION cont'd

And in five (5) technical universities:

- Cape Coast Technical University (CCTU)
 - Ho Technical University (HTU)
 - Tamale Technical University (UDS)
 - Bolgatanga Technical University (BTU)
- and
- Wa Technical University (WTU)

INTRODUCTION cont'd

- Traditional universities award BSc, MSc, MPhil, PhD degrees
- Technical universities award HND, BTech MTech and Dtech degrees

Vision

To become national and international centres of academic excellence, providing leadership through study, research and extension work in Agricultural and Biosystems Engineering appropriate to the tropical and Ghanaian conditions.

Agricultural Engineering Programmes in Ghanaian Universities

UNIVERSITIES	PROGRAMMES						
	HND	BTech Agric. Eng.	BSc Agric. Eng.	BSc Mech./Tech	Agric.	MPhil/ MEng/ MSc	PhD
KNUST			X		X	X	X
LEGON			X			X	X
UENR			X				
UCC*						X	X
UDS			X		X		
CCTU		X					
HTU**	X	X					
TATU	X	X					
BTU	X	X					
WTU	X	X					

**University of Cape Coast offers agricultural engineering at the post graduate levels in Irrigation, Mechanisation and Food & Post harvest presently*

***Ho Technical University runs a 2-year top-up BTech programme for HND graduates*

ORGANISATION, TEACHING PROGRAMMES AND ACTIVITIES

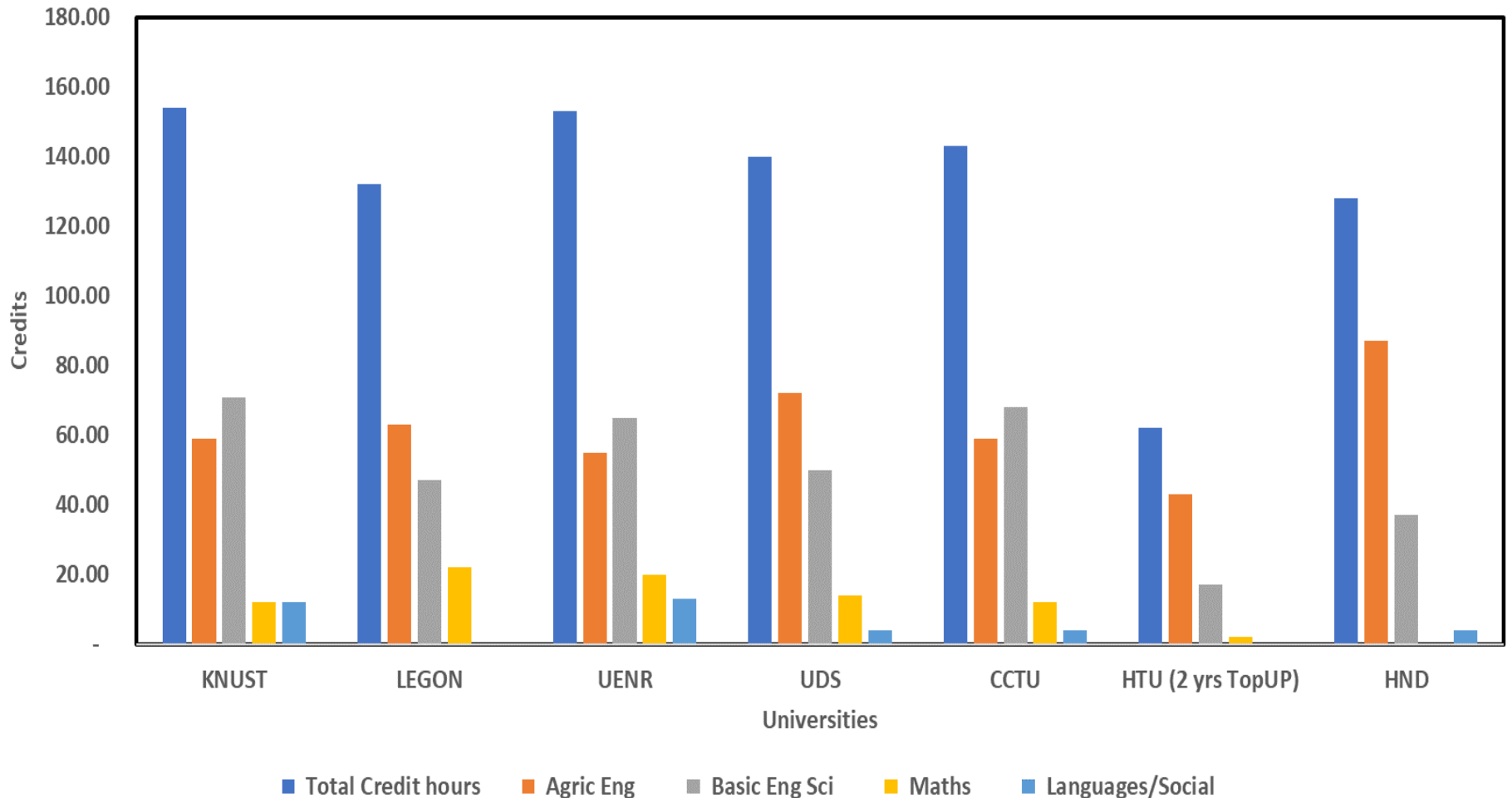
- KNUST was the first institution to run BSc in Agricultural Engineering in 1971.
- UCC currently runs **only** postgraduate programmes in Agricultural Engineering.
- All technical universities except for CCTU run a 3-year HND programme.
- HTU has introduced a 2-year BTech Top-Up for HND holders while CCTU runs a 4-year BTech programme.

Course Requirement

- A minimum of 120 and a maximum of 168 credits are required to be awarded a BSc degree in Agricultural Engineering in the traditional universities.
- A 4-year BTech degree requires approximately 143 credits while a 2-year top-up is 62 credits for HND holders (128 credits).
- Courses are mainly grouped under:
 - Professional agricultural engineering
 - Basic engineering sciences
 - Mathematics and
 - Humanities or Social Sciences

Components of agricultural engineering programmes in Ghanaian universities

Credits of Ghana BSc Engineering Programme and components



RESEARCH, EXTENSION AND CONSULTANCY

- The research focus of most agricultural engineering Departments in Ghana is to improve agricultural productivity in the following areas:
 - Post-harvest loss reduction of crops, meat and fishery products,
 - Farm Animal Traction Technology and Farm Power,
 - Mechanised farming and land and water management practices,
 - Precision agriculture,
 - Agro-chemical use and environmental pollution,
 - Wastes treatment and biogas generation, and
 - Productive uses of electricity for agro-based industries in rural areas.

FUTURE OUTLOOK

- To enhance Agricultural and Biosystems Engineering practices for the development of Ghana and Africa, departments in Ghana seek to:
 - Provide the enabling environments to suitably qualified applicants of all nationalities and gender and to produce industry-ready graduates,
 - Educate future scientists and engineers, industrialists, farmers and policy-makers to be compliant with continental agenda 2063 and global sustainable development goals .

CONCLUSION

- Agricultural engineering tertiary education is funded by the nation exclusively in public institutions.
- The programme is made up of: Humanities <9%, Mathematics 8-17%, Basic Engineering Sciences 36-46% and Agricultural Engineering 39-52%.
- To qualify for the award of the B.Sc. degree in engineering, a minimum of 120 and a maximum of 168 credit hours is required.
- There is an increasing trend of prospective applicants since the inception of the programme with one student in 1971 at KNUST, Kumasi.
- All agricultural engineering and mechanization graduates belong to the Ghana Society of Agricultural Engineers (GSAE) and they will be encouraged to join PASAE.