FACULTY NOF ENGINEERING UPDATED ACADEMIC RECORDS AND STAFF INFORMATION FOR ZNDU WEBSITE

FACULTY OF ENGINEERING OVERVIEW PROFILE

Vision: To be a global hub of engineering excellence.

Mission: To train versatile top-notch engineers and to conduct engineering research for industrialisation.

The Faculty of Engineering (FE) is the third academic faculty to be established by the ZNDU, after the Centre for Defence and Security Studies (CDSS) and the Faculty of Social Sciences (FSS). The Faculty's mandate is the provision of top-notch engineering training, research, innovation and industrialisation. Therefore, its programmes are designed to be in sync with the Ministry of Higher and Tertiary Education, Science and Technology Development's policy thrust on Education 5.0 with emphasis on teaching, research, community service, innovation and industrialisation as the basic tenets to national development. The Faculty's deliberate emphasis on Software Engineering is predicated on the recognition of the emergence of the fourth industrial revolution in which Information and Communication Technologies (ICTs), Artificial Intelligence(AI) and Software Engineering are recognised as current and future drivers of industrialisation.

The Faculty of Engineering was officially launched on 16 November 2018, with a view to making it a centre of excellence for Engineering and Aviation Sciences. The Faculty has five Departments namely the Aerospace Engineering, Computer Science and Software Engineering, Aviation Sciences, Mechanical Engineering and Electrical and Electronics Engineering.

The FE is headed by the Dean and his deputy who are both PhD/Doctorate holders. Each department is headed by a Chairperson with a minimum of an MSc Degree in Engineering and is responsible for the day to day running of the department. Lecturers in each department also have a minimum qualification of an MSc Degree in a related Engineering programme. The Director Plans and staff coordinate all activities in the Faculty.

FACULTY OF ENGINEERING PROGRAMMES

1. Bachelor of Science (Honours) Aerospace Engineering (BAE).

The degree is a five year programme including one-year of industrial attachment. The programme is designed to train Aerospace Engineers capable of applying the knowledge of Mathematics, Science, Engineering fundamentals, in order to design, develop and solve complex engineering problems in their fields of Aerospace Engineering (Aviation Mechanics and Avionics). The programme design is influenced by the objective to equip all students with the basics of the Aerospace industry. During the first two years, students will cover the same foundation courses. The students will split in the third, fourth and final years to specialise in either Aerospace Avionics or Mechanics. The programme is taught and examined at five levels of study, completed over five years inclusive of industrial attachment.

2. Bachelor of Science (Honours) Aviation Sciences (Aircraft Systems and Operations) (BAVASO).

The degree is a four year programme including one year of industrial attachment. The programme is designed to develop knowledge, skills and competences in students in the field of Aviation Management, Pilot Studies and Aeronautical Technology relevant to various employment capabilities and careers in the modern aviation industry. Furthermore, the programme also prepares students for further studies in Aviation Science.

3. Bachelor of Science (Honours) Aviation Sciences (Air Traffic Management) (BAVATM).

The degree is a four year programme including one-year of industrial attachment. The programme is meant to develop knowledge, skills and competences in the field of Aviation Management, Air Traffic Control and Air Navigation Studies relevant to various employment capabilities and careers in the modern aviation industry. The programme prepares graduates for further studies and lifelong learning in Aviation Science and in line with modern aviation standards.

4. Bachelor of Science (Honours) Computer Science and Software Engineering (BSE).

The degree programme design is influenced by the objective to equip all students with the basics of the Software industry. The minimum duration of the Bachelor of Science Honours degree in Computer Science and Software Engineering shall be 10 semesters or five years including one year of attachment. The programme is taught and examined at 5 levels of study. There are prescribed courses for each level of study and some courses are designated as core or optional. Furthermore, the programme also prepares students for further studies and lifelong learning in Software Engineering and in line with modern Software Engineering standards.

5. Bachelor of Science (Honours) Electrical and Electronics Engineering (BEE).

The degree is a five year programme including one-year of industrial attachment. The programme is meant to develop knowledge, skills and competences in the field of Electrical and Electronic Engineering as well as equip the student with relevant tools for various employment capabilities in the modern day Electrical industry. The programme also prepares students for further studies and lifelong learning in Electrical and Electronics Science in line with modern Electrical and Electronics Engineering standards.

6. Bachelor of Science (Honours) Electronics and Communication Systems Engineering (BECSE).

The degree is a five year programme including one-year of industrial attachment. The programme is meant. To develop knowledge, skills and competencies in the field of electronic systems and communications, relevant to various military applications. It is particularly suitable for those who will be involved with the specification, design, analysis, development, technical management or operation of military radar, electro-optics, communications, sonar or information systems, where the emphasis will be on Electronic Warfare.

7. Bachelor of Science (Honours) Mechanical Engineering (BME).

The degree is a five year programme including one-year of industrial attachment. The programme is designed to train Mechanical Engineers capable of applying the knowledge of Mathematics,

Science, and Engineering fundamentals, in order to design, develop and solve complex Mechanical engineering problems. The programme is meant to equip students with knowledge, skills and competences relevant to various employment opportunities and careers in the modern Mechanical industry. The degree further prepares students for further studies in the Mechanical Science field and in line with modern Mechanical Engineering standards.

8. Bachelor of Science (Hons) Degree in Military Technology (Munitions) Engineering (BMTE)

The degree is a five year programme including one-year of industrial attachment. The programme is designed to develop Post Graduates who have the necessary theoretical & experimental knowledge, skills and competences in the field of Military and Defence technologies (Munitions) relevant to various employment capabilities and careers in the modern various defence laboratories, defence public sector & private industries, ordnance factories and other similar sectors of the economy at national and international level. The degree further prepares students for further studies in related fields of study and promote participation in research and development in military and defence systems technologies.

9. Master of Science Software Engineering (MSE)

The MSc in Software Engineering programme is a one and half year (18 months) full time programme. The programme is meant to prepare students for diverse career opportunities in the ever-evolving Software Engineering world through providing a deep insight into various cutting-edge technologies and tools. Students are equipped with the knowledge on contemporary software engineering principles and paradigms, emerging technologies, advanced database and information security so that they become competent professionals in the ICT centric sectors. The programme further inculcates scientific temper in students for analysing society problems, designing and implementation of innovative software solutions to meet the country and global needs. Students are also nurtured in professional ethics, Intellectual Property Rights (IPR), managerial skills, entrepreneurial skills, communication skills and teamwork. The programme also prepares students for higher education opportunities and promotes a spirit of lifelong learning towards a successful professional career.

10. Master of Philosophy (MPhil)

The MPhil programme is 18-36 months full time and 36-60 months part time.
The programme aims to develop innovative engineering knowledge and skills in the application of science in solving social and industrial challenges and developing new technologies through research.

11. Doctorate of Philosophy (DPhil)

The DPhil programme is 36-72 months full time and 72-108 months part time.
The programme aims to develop innovative engineering knowledge and skills in the application of science in solving social and industrial challenges and developing new technologies through research.

UPDATED STAFF PROFILES AND CONTACT DETAILS

Dean: **Air Commodore (Dr) (Eng) Edgar M Kamusoko (** *ekamusoko@gmail.com)*

Doctor of Philosophy (Ethics) (UKZN).
Master of Science Degree in Renewable Energy Engineering (UZ).
Master's Degree in Business Administration (UZ).
Master of Arts Degree in International Studies (UoN).
Bachelor of Science (Hons) Degree in Electrical Engineering (UZ).
Diploma in Radar Equipment Maintenance (Wuhan Radar Academy – China).
City and Guilds of London Institute (FTC) Electrical Engineering.
Journeyman (Class 1) Avionics (Zimbabwe Ministry of Manpower Planning and Development).
Diploma in Aircraft Electrical Engineering (Xinyang Air Force Technical College China).
Member of the Zimbabwe Institution of Engineers.
National Defence Course (Kenya)

Deputy Dean: **Group Captain (Dr) (Eng) Peter Manyere (*petermanyere@gmail.com*)**

Doctor of Philosophy Degree in Electrical and Electronic Engineering (UJ).

Master of Science Degree in Communication Engineering (Information and Signal Processing) (BUAA) China.

Master's Degree in Business Administration (ZOU).

Bachelor of Science (Honours) Degree in Electrical Engineering (UZ).

Advanced Diploma in Radar Engineering Technology (PLA Air Force Academy China).

Diploma in Defence and Security Studies (UZ).

Class 1 Journeyperson: Aircraft Engineering (Radio and Telecommunications) (AFZ).

Full Technological Certificate: Telecommunications Technician (City and Guilds London).

National Defence Course Certificate (ZNDU).

Chairman Aerospace Engineering Department: **Group Captain Peter Sibanda (*chilizpsibs@gmail.com*)**

Master of Science in Engineering Avionics (Kiev Institute of Civil Aviation Engineers, Ukraine (1988).

Engineer Officer Training Part 1 (Royal Air Force College Cromwell, UK)

Engineer Officer Training Part 2: Communications Electronics and Air Defence Ground Environment (Royal Air Force College Cromwell, UK)

Chairman Computer Science and Software Engineering Department: Colonel Vengai Musanga (*vengaimusanga@gmail.com)*

Master of Science in Data Science and Informatics.

Bachelor of Science (Hons) degree in Computer Science (HIT).

Cisco Certified Networking Associate (CISCO Academy).

CCNA in Security (CISCO Academy).

Google Data Analytics Professional Certificate (Coursera)

Google Project Management Professional Certificate Coursera).
Diploma in Defence and Security Studies (UZ).

National Defence Course (Tanzania)

Chairman Electrical and Electronic Engineering Department: **Colonel Stanley Kudzai Mwalamba (***stankudzi@gmail.com)*

Master of Science in Renewable Energy (UZ 2021).

Bachelor of Technology (Hons) Degree in Electrical and Electronic Engineering (NUST 2013).

HND in Electronic Engineering – Microwave and Radar Systems (Bulawayo Polytechnic 2007.)

ND in Electronic Engineering- Radio Systems (Harare Polytechnic, 2001.)

NC in Electronic Engineering – Electronic Communications (Harare Polytechnic, 1999.)

Certificate in Data Communications and Networking (TelOne Centre for Learning 2008.)
National Defence Course (ZNDU)

Chairman Mechanical Engineering Department: **Group Captain Philip Mahere (***maherephil@yahoo.com)*

Master of Science Engineering Degree in Flight Vehicle Design (Beihang University China).

Master's Degree in Business Administration (UZ).

Bachelor of Technology (Honours) degree in Mechanical Engineering (NUST).

Higher National Diploma in Mechanical Engineering (Harare Poly).

Apprenticeship Diploma in Aircraft Fitting (STT).

National Diploma in Mechanical Engineering (Harare Poly).

Diploma in Business Studies (ICM).

Certificate in Aircraft Structural Repair (Air Zimbabwe Technical School).

Aircraft Maintenance and Munitions Officers' Course (USAF).

Aircraft Structural Repair Theory and Practice (Air Zimbabwe Technical School).

National Certificate in Mechanical Engineering (Harare Poly).
National Certificate in Aircraft Maintenance (N2) (RSA).
Certificate in Business Studies (ICM).

Chairman Aviation Science Department: **Group Captain Emmanuel Khupe (***Khupe7777@gmail.com***)**

Master of Science Degree in Community Psychology (MSU).

Bachelor of Science (Hons) Degree in Psychology (MSU)

. *Diploma in Defence and Security Studies (UZ).*

Flight Safety Officers Course (Pakistani Air Force).

Flight Instructors Course (AFZ).

Certificate of Aeronautical Rating (USA Air Force).
National Defence Course (ZNDU)

Director Planning: Colonel Nyasha Gatawa (*nyashagatawa@yahoo.com***)**

Master's in Business Administration (ZOU)).

Higher National Diploma in Computer Studies (CCOSA).

Diploma in Defence and Security Studies (UZ).

National Defence Course (ZNDU)

FUTURE PLANS

The FE has a ten-year strategic plan (2019-2029) which aims to position itself as an international research-focused institution, contributing to national, regional and as well as global solutions to challenges facing mankind. To achieve these goals, the Faculty has committed and knowledgeable staff of high integrity. The Faculty believes that the strategy will result in the production of knowledgeable and highly skilled graduates with a desire for innovation, entrepreneurship and industrialisation integrity, who will act as a catalyst for the growth of the local industry, thus positively transforming the Zimbabwean society at large.