UNIVERSITY OF WOLVERHAMPTON
INTERNATIONAL STUDY CENTRE

INTERNATIONAL YEAR ONE: ENGINEERING



Programme Leader: Dr. Emeka Okechukwu

Dr. Emeka Okechukwu is STEM Programme Lead at the University of Wolverhampton International Study Centre. He joined Malvern International in January 2026 as a Lecturer and Module Lead in Health Sciences and Social Care before being appointed STEM Programme Lead in September 2026.

With over 15 years of university teaching and research experience, he leads the Health Sciences and Social Care, Engineering, Sciences, and Computing pathways, supporting academic quality, curriculum development, staff development, and student success. Emeka is passionate about delivering innovative, inclusive, and research- and industry-informed education that promotes excellence in student achievement, progression, and employability.

Module overview:

English for Technical Communication (Computing and Engineering)

This module develops students' ability to communicate effectively in technical and professional contexts, equipping them with the skills to produce clear, structured, and ethically sound technical documentation. Students will engage with academic and industry-based research, learning to evaluate sources, synthesise information, and integrate AI tools responsibly. The module emphasises technical report writing, professional presentations, and digital research communication, ensuring students are prepared to convey complex ideas to diverse audiences. Students specialising in Engineering will focus on technical proposals, failure analysis, and visual communication in engineering reports, while those in Computing will explore software documentation, cybersecurity reporting, and data visualisation. The module follows a process-based learning approach, where students progressively refine their research, writing, and presentation skills through formative feedback, peer collaboration, and structured reflection.

Mathematics for Scientists

This module provides students with the fundamental and applied mathematical techniques essential for engineering disciplines. Through a combination of theoretical learning, problem-solving, and computational applications, students will develop the mathematical skills necessary to analyse and model real-world engineering problems. In addition to mathematical proficiency, this module integrates the development of essential academic skills. By the end of the module, students will have gained the confidence to apply mathematical reasoning and computational tools to solve complex engineering challenges, preparing them for further study and professional practice.

Engineering Mechanics and Design Principles

This module provides students with a fundamental understanding of engineering mechanics and design principles, equipping them with the analytical and problem-solving skills required in aerospace, automotive, mechanical, and motorsport engineering. Students will explore statics, dynamics, structural analysis, and material properties, developing the ability to analyse forces, motion, and mechanical behaviour in industry applications. The module also introduces engineering design methodologies, covering design thinking, decision-making, CAD modelling, and prototype development.

Introduction to Engineering Materials and Computational Tools

This module provides students with a fundamental understanding of engineering materials and computational tools, equipping them with the knowledge and technical skills needed to analyse and optimise material selection for engineering applications. Students will explore the mechanical properties, behaviour, and failure mechanisms of metals, polymers, ceramics, and composites, developing an understanding of how materials perform under different conditions. Additionally, they will gain insights into manufacturing processes, sustainability considerations, and non-destructive testing methods. Alongside material science, this module introduces engineering computational tools, including MATLAB, Python, finite element analysis (FEA), and computational fluid dynamics (CFD), enabling students to model and simulate material performance under stress, heat, and environmental factors. The module culminates in an applied project, where students will justify material selection, conduct simulations, and optimise materials using computational tools.