

IN HEREFORD: A NEW ENGINEERING UNIVERSITY FOR THE UK

ADDRESSING THE 44,000 ANNUAL SHORTFALL OF GRADUATE ENGINEERS

- ▶ Creation of a new, independent, not-for-profit world-class teaching university, based in Hereford, focused on developing global best-of-breed education models to meet the growing needs for engineering talent in the advanced manufacturing, bio-medical, defence & cyber, food, ICT, infrastructure, NGO and smart-city sectors
- ▶ Current plans co-developed with the University Warwick, Olin College of Engineering (USA) and the Lassonde School of Engineering, Toronto with help from the Royal Academy of Engineering, CBI, EEF, IET and other professional bodies
- ▶ Targeted at the needs of engineering and technology employers. First to produce employment-ready, productive, industry relevant, culturally intelligent, innovative, ethically aware, problem solving, economically and financially literate graduates who will be able communicators and project managers. Second to up-skill existing employees within Degree & Higher Apprenticeship schemes to improve productivity, technical and management capability
- ▶ Student focused learning with special emphasis on enhancing pathways for women (50:50 faculty and student gender commitment), pathways recognising work/life experience (apprenticeship and military/special forces) and opportunities for part-time study while employed

Key Features:

- Very close collaboration with industry and academic partners on curriculum design, provision of real problems for classroom, and input on broader skill needs
- Interdisciplinary and problem-based/learning-by-doing provides students with high value for money, applied experience, designed to embed lifelong learning skills, and enhance innovation, design and creativity capabilities
- Strong contrast with current HE approaches to engineering/tech education; blended academic and practitioner faculty; high level of faculty contact time (4.5 hours +/day) using block timetabling, seminar, studio and lab/workshop teaching, classes of 20-30 students with a student staff ratio of 12:1
- New approach to admissions reaches beyond traditional groups to focus on interviewing to identify those who balance academic ability with *“curiosity, grit and passion”*
 - Will require AAB at A-Levels or 38 points IB Diploma or equivalents
 - Will **not** require Physics & Maths A-Levels, abandoning the engineering sector’s obsession for these
 - Will admit from non-traditional backgrounds – e.g., higher level apprentices, armed service leavers
- All students required to study relevant humanities, design/arts and social science topics
- Mandatory work 6-12 month placements prior to graduation – Accelerated Integrated Masters in Liberal Engineering degree (MEng equivalent) on pathway to CEng
- 46 week academic year enabling completion of full academic and internship programme in three years
- Faculty and staff rewarded for inspirational teaching, related scholarship, education innovation and for creating “safe to fail” experience-based learning environment
- Application & Development Centre to be co-developed with Hereford Enterprise Zone with incubator units to support major engineering and technology companies and their SME supply chain companies in West Midlands, Wales and the Southwest
- Start up and growth companies to be supported by venture capital and ‘angel’ funds
- “Blank slate” trailblazer opportunity allows for redesign of governance, operating, IT, funding and other core operating models
- Commitment amongst partners to publish and share learning within the HE sector

Milestones:

- HM Government commits in Autumn 2015 Spending Review to: *“Providing support to secure launch funding to create a new university in Hereford focused on engineering (subject to approvals)”*
- March '17: £8M capital granted by Marches LEP/Local Growth Fund; £17M further HMG support expected
- Over £1,175,000 in seed corn funding raised locally from businesses and individuals
- University partnerships in place, curriculum under development for Q4 2018 validation
- Industry and professional institution partnerships developing
- Project supports Ten Pillars of HMG's UK industrial & productivity strategy
- Founding President/CEO in post 01 July 2017; senior leadership team in place Q4 '17
- Goal: To admit first cohort of 300 undergraduates Autumn 2020, growing to 5,000 over 10 - 15 years
- Start-up investment capital requirement of £60.22 million to be funded by corporate & philanthropic investment (£24.96M), HMG (£24.96M), and debt (£10.3M)
- Breakeven forecast at around 1,000 students, estimated 2023-24

Outcomes:

For Education:

- NMiTE at the forefront of global engineering HE by putting the *passion* back into engineering education with transformational innovation in teaching and operations; raising the bar across the sector at low cost
- Employee and student participation in management of NMiTE, based on John Lewis Partnership principles
- Student led, value for money education as measured by greater direct links to employment
- “Open source” commitment to the broader UK HE sector
- New pathways into STEM for women, non-science students, ex-military, vocational and part-time learners
- Centre of excellence in HE innovation to support long term sustainability of UK Higher Education Plc

For Engineering:

- Reinvigorating the study of engineering. Enabling talented young people with burning ambition, inquisitive minds and a determination to change the world for the better.
- Enhanced engineering education, resources and capability as key drivers to UK's competitiveness and productivity agendas
- Contribution to addressing the shortage (44,000 pa – Engineering UK) of UK engineering graduates
- Meeting employer needs from engineering higher education with level 6 & 7 Degree Apprenticeships
- Attracting more women and students from non-traditional pathways into engineering

For the Economy – Local and National:

- Very high return on public capital invested
- Total leveraged investment £450+ million over 10-15 years; adding £120 million pa to the country's GDP
- Creation of engineering centre of excellence for West Midlands
- Addressing serious rural/regional inequity in support of economic regeneration
- Creation of education/industry ecosystem for future human capital development
- Transformative project for the Herefordshire/Marches economy; raising median gross weekly earnings (currently £387pw, the lowest in any unitary authority in the UK: Annual Survey of Hours and Earnings)