

# SWANSEA UNIVERSITY

Faculty of Science and Engineering Candidate pack

### SWANSEA UNIVERSITY

**Making Waves Since 1920** 

The Great Hall The Great Hall on our Bay Campus is a multi-purpose cultural arts venue for the University and wider community



**The Abbey** A stunning historical building, rich in wildlife, at the heart of Singleton Campus; one of our two award-winning beachfront campuses Swansea University is a research-led university that thrives on exploration and discovery. We are innovative in our approach to our teaching delivery and operations, and are proud of our collaborative staffing community.

With a long history of working with business and industry, today our research has a much wider impact, reaching across the health, wealth, culture, and well-being of a global society.

With over 27,000 students and 3,800 staff, we have achieved extraordinary growth in recent years with our activity exceeding that of many larger universities, whilst being resilient in adapting to changing landscapes. This success though, has not compromised the friendly and relaxed atmosphere that has always characterised the "Swansea experience".

Having celebrated our centenary year in 2020, we are extremely proud of our contribution to the transformation of Swansea as a city of distinction. As we continue our journey as a 21st century University, we look forward to becoming a truly global institution, focusing on the big issues, and improving lives, while continuing to provide inspirational teaching.

We are committed to promoting gender equality, diversity and inclusion, and have been a member of the Athena SWAN Charter since 2008. We hold a Silver Institutional Award; the highest standard currently awarded to any UK University; and were the first university in Wales to achieve this.

Our stunning waterfront campuses make us a desirable location for staff from around the world, and our multicultural community provides a global perspective, enabling those who join us to develop skills and knowledge, enriching their careers.

Join us and help shape our next century of innovation and excellence

### **AWARDS & RANKINGS**





### **OUR STRATEGIC VISION**

An integral part of our success is our ability to provide excellent teaching and research, as well as an enviable quality of life for both our colleagues and students.

We are at heart an intrinsically principled, purposeful and resilient organisation, characterised by the distinct values, culture and behaviours that lie at our core of our five key strategic pillars:

#### **OUR CIVIC MISSION:**

We proudly belong to the City of Swansea and the Swansea Bay City Region. With campuses in three local authority areas, we recognise that our University is the region's university.

#### **OUR STUDENT EXPERIENCE:**

Students are at our heart and we take pride in our consistently strong reputation for quality of student experience, the strength of our support services, and our commitment to student mental health and wellbeing.

#### **OUR LEARNING AND TEACHING:**

Sharing of knowledge to nurture independent, critical thinking is fundamental to our purpose. It enables our students to be resilient in the face of global challenges and to adapt to the changing world of work. We celebrate our Welsh heritage and our part in a bilingual nation.

#### **OUR RESEARCH:**

Our research changes lives, drives innovation and regional growth, and is aligned to the UN Sustainable Development Goals. It impacts on our culture, society, health, wellbeing, economy and our planet.

#### **OUR ENTERPRISE:**

We are exceptionally collaborative and entrepreneurial. We were founded by industry, for industry, and we remain true to the ambitions of our founders, working with industrial, commercial and public sector partners for the benefit of our region and nation.

Each of these areas is marked by our commitment to making a difference, to being socially and environmentally responsible, to striving for excellence, and to maintaining a global outlook that enables us to be a community University with international reach and reputation



#### **OUR VISION**

We are, and will continue to be, a principled, purposeful and resilient University that balances excellent teaching with world-leading research and innovation in an open environment which enables our students and colleagues to excel. While we are valued globally as a trusted partner, we are deeply committed to our region and are proud to be a University for Wales.

Gweddw crefft heb ei dawn / Technical skill is bereft without culture

## **TEACHING EXCELLENCE**

We provide an outstanding and balanced academic environment that enables students and colleagues to excel.

Our commitment to diversity, combined with our ability to take students with low entry tariffs whilst achieving sector-leading graduate employability, demonstrates the value that is added by our University's rich student experience and teaching quality. Our University is one of the UK's leading HEIs for learning gain, with graduate employment at the heart of our provision.

Colleagues at Swansea are committed to professional development, continually providing inspirational and transformative learning, working at the leading edge of teaching activities. Our Academic community includes individuals who have received independent recognition for their achieves such as; BMA Cymru Wales/BMJ Clinical Teacher of the Year; WISE Innovation award winner; Nation's Lifesavers – top 100 individuals; Advance HE National Teaching Fellowship; and many more.

We also have a number of unique academies and services, that leverage our research credentials and industry partnerships to support our world class teaching and learning offering.

Our state-of-the-art Health and Wellbeing Academy provides opportunities for students to work alongside highly qualified practitioners, in a professional, relaxed and friendly environment. The academy supports the health and wellbeing of people in local region. In 2018 it was recognised for its achievements; winning the Social and Community Impact category, in the Guardian University Awards.

The Swansea Employability Academy (SEA), in partnership with the Students Union, provides funding for student-led employer engagement events. SEA enables students to lead on their own initiatives, ensuring that learning and experience exists in tandem, resulting in successful graduate career opportunities.

All our academies focus on enhancing teaching and learning excellence and aim to maximise the benefits not only to our students and colleagues, but to the wider community too.

All profit is reinvested into research and education

Health and Wellbeing Academy Supporting the health and wellbeing of people in south-west Wales.



### **RESEARCH EXCELLENCE**

Swansea University is a research-intensive anchor institution, creating economic, societal, cultural and health impactwith global reach. We continue to build upon our rich heritage of discovery and knowledge-led research and the pioneering spirit that has defined our University since it was founded by industry, for industry, in 1920.

Renowned for co-creating and delivering transformative innovations, we foster ambitious collaborations with partners in industry, the public and third sectors. Our strenghts in interdisciplinary research and innovation, across our three Faculties (Science and Engineering, Humanities and Social Sciences, and Medicine, Health and Life Science) makes a difference to lives and futures through excellent, trusted and responsible research and impact. We submitted the work of a record number of researchers (578) for assessment to the Research Excellence Framework (REF) 2021, representing a 56% increase on the 370 submitted in 2014. We have grown our overall proportion ofworld-leading and internationally excellent research from 80% in 2014 to 86% in 2021, with over 90% of our impact being classed as having world-leading or internationally excellent reach and significance.

As a research-intensive Welsh HEI, we contribute to Welsh Government's "twin priorities of delivering social justice and supporting a buoyant economy" and the Wellbeing of Future Generations (Wales) Act (2015), contributing to progress against the UN Sustainable Development Goals (SDGs).



RESEARCHERS

**91%** RESEARCH CLASSED AS

'WORLD LEADING' OR 'INTERNATIONALLY EXCELLENT'

(REF 2021)

578

TOP 400 GLOBAL QS RANKING

RESEARCHERS' WORK SUBMITTED FOR REF ASSESSMENT IN 2021



### **INNOVATION & ENTERPRISE**

Swansea University was founded by industry, in 1920, to delivery for industry. Nearly one hundred years on, we continue to have impressive links with commercial and industrial partners across a range of sectors. We lead Wales in research areas critical to economic growth and population well-being including Environmental Sciences, Medicine and Engineering.

We are committed to promoting and supporting collaborations that lead to innovation. We are proud to have homegrown, award-winning enterprises actively working with our University. We currently have:

- Over 40 companies co-located on our campuses
- Over 30 Bay Campus spin-out enterprises, since itopened in 2015
- £80m in HEBCI collaborative research income ourhighest ever and an increase of £6m from 2021

We listen to business needs and have developed effective strategic collaborations that are mutually beneficial, helping to:

- Solve industry challenges and discover newopportunities
- Provide two-way access to talent and futureproofing Skills for industry
- Provide commercial opportunities such as flagshipindustry co-located centres.

In recognition of our University's importance to the Swansea Bay City Region, we have pledged, alongside Swansea Council, to work closely to create more jobs, improve education and continue promoting a culture of enterprise and innovation.

We have a number of significant, long-term partnerships with industry, ranging from TATA and Rolls Royce to the DVLA and SKY.

#### City Deal

The £132 million Swansea Bay City Deal Campuses project led by Swansea University, in partnership with Swansea Council, Swansea Bay University Health Board, Hywel Dda University Health Board, A Regional Collaboration for Health (ARCH) Partnership and key private sector partners, has secured £15m to develop sites in Morriston and Singleton. It will promote innovation and business growth in the expanding Medical Technology and Sports Technology sectors, and is proposed to open in late 2026.

Led by Neath Port Talbot County Borough Council, as part of the Swansea Bay City Deal and in partnership with Swansea University and Tata Steel UK, South Wales is set to build on its strength and expertise in steel and metals innovation with the launch of a new £20 million facility, SWITCH: South Wales Industrial Transition from Carbon Hub.

The new facility, scheduled for operation in late 2025, will see academic researchers, government and industry collaborating to deliver practical innovative solutions to decarbonise the steel and metals sector and supply chain.

#### Impact Acceleration Accounts (IAAs)

Building on the success of the EPSRC IAA over the last 10 years, the University IAAs have been awarded >£2m to support a portfolio of activities from 2022 over the next 5 years.

The funding includes an award from ESRC (amountto be confirmed), £450,000 from the Arts and Humanities Research Council (AHRC), £450,000 from the Medical Research Council (MRC) with £1,158,212 from the Engineering and Physical Sciences Research Council (EPSRC).





ROLLS









Unilever









Nuffield Foundation

Microsoft



AIRBUS

### INTERNATIONAL STRATEGIC PARTNERSHIPS

We have a number of sector-leading International Strategic Partnerships (ISPs).

These ISPs are distinctive because of the breadth and depth of the collaborations, which encompass research, teaching and mobility across a wide range of subject areas.

Recent years have seen a 91% increase in the number of students taking advantage of the global opportunities which we are proud to offer.

Our International strategy 2020 - 2025 focuses on our commitment to comprehensive internationalisation, evidenced through action, to infuse international and comparative perspectives throughout our University's teaching, research, and knowledge exchange activity.

Deep partnerships, co-produced with a small number of high-quality universities overseas, is at the heart of our strategy.

Collaborations with 127 COUNTRIES WORLDWIDE



### A BEACON FOR WELSH LANGUAGE AND CULTURE

Swansea University is a bilingual university and a beacon for Welsh language, heritage and culture.

From humble beginnings as a local University College over one hundred years ago, today we are confident and proud to be a University for Wales.

We promote and celebrate our Welsh heritage, whilst being strong enough to hold our own alongside many of the world's top institutions.

We are a cultural and economic anchor within our community, with a distinct role to play in driving regional development, including advocating the use of Welsh language. We are committed to the Welsh Language Standards and are fully inclusive in welcoming students, colleagues, partners and public to use Welsh in whichever way they wish when interacting with us.



# **ACADEMI HYWEL TEIFI**

Academi Hywel Teifi is the Welsh-language powerhouse of the University – a centre of excellence for Welsh-medium teaching and learning across the range of subjects.

Established in 2010, it is named in memory of Professor Hywel Teifi Edwards, a former Professor of Welsh at the University and one of the nation's greats.

Home to a core team of staff, it also provides a community to the thousands of Welsh-speaking students on campus. It works to ensure a higher status for the language in all aspects of life at our University and in south-west Wales.

Through various activities it increases and enriches the University's Welsh-medium provision and research and encourages collaboration, entrepreneurship and opportunities. The aim is to ensure that Swansea University students have the best of two worlds – a Welsh-medium experience in a university with multicultural and international connections. THE ACADEMI HOUSES;

**Coleg Cymraeg Cenedlaethol – Swansea branch:** Strategically plans and supports the Welsh language Higher Education provision across Wales. It plays a key role in securing and developing opportunities for students to study through the medium of Welsh.

#### Learn Welsh – Swansea Bay Region:

Delivers high quality language courses and activities, on behalf of the National Centre for Learning Welsh, for Swansea and Neath Port Talbot and beyond.

## The University's Translation and Language Compliance Unit:

Provides a translation service to the University and promotes, monitors and reports on Welsh language compliance.

#### Tŷ'r Gwrhyd:

A partnership between Academi Hywel Teifi and Neath Port Talbot Council, (which received a £300,000 Welsh Government grant) to establish a Welsh-language community centre in the heart of the Swansea Valley.



# OUR PEOPLE & UNIVERSITY CULTURE AND THE BENEFITS OF WORKING AT SWANSEA UNIVERSITY

# EQUALITY, DIVERSITY & INCLUSION

Our people are our most important asset, they define who we are. We understand that our daily behaviours matter; we believe in each other, we celebrate each other's achievements, and we hold each other to account.

We respect our colleagues, treating others as we expect to be treated, and we work as one university, recognising that every colleague contributes to our success.

We aim to provide a supportive environment that's free from unfair discrimination and enables people to fulfil their personal potential.

We are committed to promoting equality, diversity and inclusion, for all.

#### We are proud to be:

- Accredited **Real Living Wage** employer
- Athena SWAN Charter member
- Employers for Carers member
- Race Equality Charter member
- Stonewall Top 100 Employer
- Victim Support Hate Crime Charter member



### **CLOSING THE GENDER PAY GAP**



2022 BENCHMARKS UK HE: 14.8 Wales HE: 14.7 DECREASE over 5 years

6.2%

2022 BENCHMARKS UK HE: 13.7 Wales HE: 8.5

MEDIAN GAP: 5.5%

DECREASE over 5 years

8.2%

We are proud to have reported a reduction in our gender pay gap for five years running. We are currently ahead of our own targets and the Higher Education benchmarks, making our rate of progress sector leading.

### COMITTED TO RACE EQUALITY



### Swansea International Race Equality Network

SIREN, our consultative, support and social group provides a link between the University, and colleagues with an interest in race equality to influence positive change.













### **BENEFITS OF WORKING AT SWANSEA UNIVERSITY**

We provide an excellent working environment, that's free from unfair discrimination and is supported by our warm and welcoming campus communities and enables people to fulfil their personal potential.

We know that people have commitments outside their job. We aim to help colleagues achieve the right work-life balance for them. We have a range of benefits – *from family friendly policies, to agile working and wellbeing initiatives, discounts and savings, and more!* - all supported by the services of our award-winning HR department and our Health and Wellbeing teams.

In addition to our staff benefits, colleagues also gain access to our specialist support teams and academies, including:

Swansea Academy of Learning and Teaching (SALT) Home to resources and support for all learning and teaching enhancement.

#### **Research, Engagement & Innovations Services (REIS)**

Supports the entire life-cycle of research ideas, from grant capture, to project management, the commercialisation of research, and the development of business ideas.

#### State-of-the-art Health and Wellbeing Academy

Colleagues can benefit from highly qualified practitioners, in a professional, relaxed and friendly environment, whilst supporting the training of our students.



**PENSIONS** up to 21.6% employer contributions, depending on role grade and scheme provider

#### FAMILY FRIENDLY & FLEXIBLE WORKING OPTIONS

including 31 days annual leave + bank holidays and agile working

#### **COMPETITIVE SALARIES**

and fairness in pay, as a Real Living Wage employer

#### FREE & DISCOUNTED WELLBEING SERVICES

staff counselling, mental health support, osteopathy services

**ONLINE DISCOUNT PORTAL retail & entertainment offers** 

### SPORTS & SUSTAINABILITY DISCOUNTS & REWARDS

discounted sport centre memberships, Cycle to Work scheme

#### **DEVELOPMENT & TRAINING SERVICES**

for academic and professional services colleagues

### THE CITY OF SWANSEA

Swansea, Wales' city by the sea, is a lively and vibrant maritime city with a diverse population of 240,000. It is both picturesque and cosmopolitan, offering an excellent quality of life.

As Wales's first 'Human Rights City', it is a thriving city of celebration. Over the years, it has become an increasingly diverse and inclusive place to live and work in. Voted 6<sup>th</sup> Safest Student City *(Complete University Guide 2023)* and 26<sup>th</sup> Cheapest City (StudentCrowd 2022), Swansea is both safe and affordable. Boasting of people and culture from around the world, the heart of the city centre is embraced through its food, festivities, cultural and community life.

Swansea, and surrounding regions in South Wales, has a strong sense of place, making people feel at home, whilst having direct links to London and Manchester and Cardiff. It succeeds in offering children a flying start in life through its educational establishments as well as recreational provisions.

The city is set to continue evolving at pace with The Swansea Bay City Deal; a £1.3bn investment secured by the Swansea Bay City Region for 11 major projects across Pembrokeshire, Carmarthenshire, Swansea and Neath Port Talbot; being a key factor.

Only a stone's throw away, the Victorian resort of Mumbles, also known as the 'Gateway to Gower', offers a fantastic array of attractions, including a pier, traditional boutiques, craft shops and ice-cream parlours. The Gower Peninsula – designated Britain's first 'Area of Outstanding Natural Beauty'– extends west of Mumbles in a succession of stunning coastal and rural sceneries.

To the east, the 'Waterfall Country' at Afan and the Vale of Neath is a haven for walkers and bikers alike. A journey west, takes you to Britain's only coastal national park: Pembrokeshire. Swansea is also privileged to be less than an hour's drive from the Brecon Beacons National Park.



### **OUR LEADERSHIP TEAM**

#### SENIOR LEADERSHIP TEAM

Our University consists of three faculties; Faculty of Humanities and Social Sciences; Faculty of Medicine, Health and Life Science; Faculty of Science and Engineering, who are led by our Senior Leadership team, which consists of the below roles:

- Vice-Chancellor
- Registrar & Chief Operating Officer
- Pro Vice-Chancellor (Education)
- Pro Vice-Chancellor (International)
- Pro Vice-Chancellor (Research & Innovation)
- Pro Vice-Chancellor (Faculty of Humanities and Social Sciences)
- Pro Vice-Chancellor (Faculty of Medicine, Health and Life Science)
- Interim Pro Vice-Chancellor (Faculty of Science and Engineering)
- Chief Financial Officer

#### **PROFESSIONAL SERVICES**

Our Professional Service Directorates support our University's work and are responsible for ensuring efficient and effective professional services across our University's activities. These areas include:

- Academic Services
- Estates and Facilities
- Human Resources
- Information Services and Systems
- Marketing, Recruitment & International

- Planning and Strategic Projects Unit
- Research, Engagement and Innovation Services
- Vice Chancellor's Office

#### COUNCIL

The Council is the governing body and thus the supreme authority of the University, which means that it is ultimately accountable for the conduct and activity of the University and its representatives. The Council is responsible for determining the strategic direction of the University and for the finance, property, investments and general business of the University. It is also responsible for assuring the quality and standards of the University's academic provision and is discharging its duties in accordance with the Welsh Quality Assessment Framework.





# THE FACULTY OF SCIENCE AND ENGINEERING



### THE FACULTY OF SCIENCE AND ENGINEERING

A CENTRE OF EXCELLENCE PROVIDING AN INNOVATIVE, INCLUSIVE LEARNING ENVIRONMENT THAT PRODUCES LIFELONG LEARNERS WHO ARE PREPARED FOR THE GLOBAL ECONOMY.



RACE:

**33%** ETHNIC MINORITY COLLEAGUES

**GENDER:** 

27% FEMALE 73% MALE

Our faculty has an under-representation of women, we are working hard to address this and we particularly welcome applications from women. *Appointments will always be on merit.* 

The Faculty of Science and Engineering brings together Swansea University's science and technology staff and students with the aim of providing a collaborative learning and research environment that works to create innovative solutions and advance technologies that will build a more sustainable future for all.

Located across both the University's Singleton and Bay campuses, the Faculty has around 1,500 staff and 7,500 students from across the globe.

### FACULTY STRUCTURE

School of Aerospace, Civil, Electrical and Mechanical Engineering	School of Biosciences, Geography and Physics	School of Engineering and Applied Sciences	School of Mathematics and Computer Science
Aerospace Engineering	Biosciences	Biomedical Engineering	Computer Science
Civil Engineering	Geography	Chemistry	Mathematics
Electronic and Electrical Engineering	Physics	Chemical Engineering	
Mechanical Engineering		Materials Science and Engineering	
		Sport and Exercise Sciences	

For more information about the Faculty of Science and Engineering visit our website at **swansea.ac.uk/science-and-engineering** 

### **TEACHING**

We aim to create an innovative learning environment, offering every student a wide range of opportunities so that they develop skills that thoroughly prepare them for the dynamics of the global job market or a career in research.

Our multidisciplinary degree portfolio includes over 60 courses from the traditional Engineering disciplines to the varied Science fields.

We continue to adapt to the changing climate by updating current programmes and creating new courses making sure that our students are learning about current topics and advancing technologies.

Understanding our multinational students and making sure they have all the support and opportunities they need to have an excellent experience is a key priority. We aim to increase the diversity and inclusivity of our learning communities to expand and deepen the talent pool.

Together we strive to enable a students' personal development beyond the traditional classroom, broadening their experience, increasing their employability and making them ready for their next venture.

swansea.ac.uk/science-and-engineering/courses

















### RESEARCH

Our Science and Engineering researchers connect to create solutions and advance technologies that will transform the life of everyone on our planet.

Part of a university created by industry for industry – today we continue to work with and engage our local community and partners, both national and internationally.

We have teams in place to support research from funding application right through to project closure. The total value of live projects is currently just over  $\pounds$ 147M.

Our vibrant research environment encourages supportive collaboration, expanding the breadth and international impact of our research delivered through our five Interdisciplinary Research Institutes:

- Centre for Integrative Semiconductor Materials (CISM)
- Climate Action Research Institute (CARI)
- Health Technology Solutions Research Institute (HTS)
- Materials and Manufacturing Research Institute (M2RI)
- Zienkiewicz Institute for Modelling, Data and AI (ZI)
- **R** swansea.ac.uk/science-and-engineering/research

### ENTERPRISE PARTNERSHIPS AND INNOVATION

We have strong and established links with a large variety of local, national and international companies, both with our research, teaching and as graduate employers.

Our established partnerships build on our research strengths and our track record of translating ideas into real world impact.

With a strong sense of place, we collaborate with civic actors and local industrial clusters such as South Wales Industrial Cluster, Net Zero Industry Wales, Natural Products Biohub and Environment Platform Wales, to develop technologies that have a global reach.

We have partnerships with Airbus, Rolls Royce, Tata Steel and continually work to expand our network and utilise our expertise.

Our professional services teams are on hand to help develop new partnerships, grow existing ones and explore translational opportunities for our staff's innovations, be that through collaboration, licensing or spin outs.



### **FACILITIES**

The Faculty of Science and Engineering continually invests in its state-of-theart infrastructure.

#### Facts & Figures:

- 13 buildings over 2 campuses and 4 + external locations in Wales and beyond
- 200 + teaching and research laboratories with 1000s of high-tech small to large sized equipment
- Modern Academic Offices
- 29 Faculty PC labs, over 3500 PCs/laptops and associated software

You can take a tour of our facilities here

swansea.ac.uk/virtual-tour-stand-alone









## **PROUD OF OUR WORKFORCE**

The Faculty of Science and Engineering is made up of around 1500 staff, this includes over 350 Academic staff.

Within the Faculty we proudly have Fellows within various societies including the Royal Society, RAEng and Learned Society of Wales. We also have multiple staff with either OBE, CBE or MBE.

We highly value the importance of career progression and work with individuals to make sure they have the equipment, funding and support needed to be successful.

We are proudly signed up to the Technician Commitment and members of the Faculty lead the University's Technician Commitment Steering Group.

#### **Awards & Prizes**

- Awarded the Queen's Anniversary Prize in 2021 for its Renewable Energy Technology research
- Athena Swan Silver award in Engineering, Bronze awards in Biosciences, Geography and Physics.

#### Community

We hold multiple events throughout the year to encourage colleagues to come together. Each year the Faculty has a Summer BBQ and a Christmas Party. There are also health and wellbeing subject talks and group sessions on various topics.

















Prifysgol Abertawe Swansea University

### AN EXCITING TIME TO JOIN US

Swansea University has been making a difference since 1920. More than one hundred years on, we continue to excel and grow with purpose and integrity.

Our stunning waterfront campuses make us a desirable location for staff from around the world, and our multicultural community provides a global perspective, enabling those who join us to develop skills and knowledge, enriching their careers.

JOIN US, AND HELP SHAPE OUR NEXT CENTURY OF INNOVATION AND EXCELLENCE

www.swansea.ac.uk/jobs-at-swansea