

IMPERIAL

Learning and Teaching Strategy



Our Vision

Imperial is a world-leading science, technology, engineering, medicine and business (STEMB) university. We play a crucial role in tackling humanity's most complex problems such as climate change, clean energy, global healthcare, responsible AI, international security and innovation-driven economies.

Our most pervasive pathway for international impact and influence comes from our highly skilled graduates. We train the next generation of innovators, researchers, doctors, entrepreneurs and leaders to tackle these challenging global problems. Our graduates are sought after internationally both by employers and other universities for their distinctive attributes including independent problem solving, multicultural and multidisciplinary team working, strong digital and interpersonal skills, and as entrepreneurial initiators of innovation that brings benefit to society.

To be successful, our education must reflect modern, relevant, innovative and evidence-based teaching practices. Our students are graduating into an increasingly uncertain global economy, and may well end up following careers that do not yet exist. The future will demand new skills – particularly emotional resilience, flexibility, and creativity, alongside exacting technical knowledge, and sophisticated communication skills.

Phase one

The initial phase of our Learning and Teaching Strategy has led to investment in our people and places, our digital and physical infrastructure, and the student experience. Imperial's dedication to exceptional learning and teaching is also reflected in external benchmarking. We secured our highest ever student satisfaction scores in the National Student Survey in recent years, as well as a Gold Award in the Teaching Excellence Framework, and several University of the Year awards from respected, high-profile rankings.

Phase two

We are now moving into the next phase of this project with confidence and determination. Collaboration across academic departments, faculties, our student support teams and the student body resulted in comprehensive community feedback gathered during the 2022–23 academic year. This feedback identified five fresh aims that will build on our progress, while aligning students' experience with the broader objectives of Imperial's new strategy – Science for Humanity:

- Reviewing our approach to assessment and feedback, with the aim of improving quality and reducing workloads for students and staff.
- Delivering degree programmes that challenge students to achieve their full potential through authentic discovery-based learning.
- Developing lifelong learning opportunities for our current students, alumni, and a global community of learners yet to discover us.
- Growing our digital education capabilities both in scale and in scope to enhance our use of novel digital technologies, virtual educational spaces and data.
- Fostering a supportive environment which offers a sense of community both inside and beyond the learning environment.

Of course, we also want to retain and build upon new collaborative approaches that have been successfully embedded across our community in recent years. The Learning and Teaching Strategy will continue to drive institution-wide strategy, while supporting academic departments and teams for innovation in discovery-based learning, digital technologies, inclusivity and community-building. This will ensure our continued agility to respond to world-changing developments.

A key part of the Strategy has been to recognise the immense value and insight that our student community can offer. Our close partnership, collaboration and co-creation with students and Imperial College Union is a focal point for our enduring success and remain at the centre of all we do.

Professor Peter Haynes FREng

Vice-Provost
(Education and Student Experience)

Our Aims

The Learning and Teaching Strategy sets out our institution-wide approach to development in education. The strategy allows us to: communicate and project the excellence and innovation in what we do; share best practice; collaborate and partner internally; and deliver the infrastructure and resources needed to support perpetual innovation.

The strategy was structured around the following strategic priorities which remain relevant:

- To deliver degree programmes that challenge students to achieve their full potential through discovery-based learning.
- To provide a diverse range of interactive teaching, assessment and feedback approaches.
- To further embed our research into our education.
- To expand our global reach and diversify our student body.
- To expand continuing education opportunities that enable life-long learning.
- To foster greater collaboration across our academic disciplines.
- To employ creative thinking in the use of physical and virtual space to maximise the student experience.

Over the last five years, we have brought together colleagues and students from across the university to deliver the strategic priorities of: reviewing our curricula and assessment; using evidence to transform teaching; fostering an inclusive and diverse community; and developing our digital innovation.

The next phase of this project will include **five fresh aims** to build on our progress. These will join the existing approaches that have been successfully embedded across our community in recent years.



Energy Futures lab lecture theatre

Embedded approaches

- Our commitment to students, working in partnership with staff to transform our approach to teaching, assessment, feedback and other activities.
- Our work in the educational evaluation and research space.
- Our commitment to offer training and continuing professional development for staff.
- Our development of the physical learning environment.
- Our seed funds to enable bottom-up innovation.
- Our approach to capturing student feedback and tracking the actions it has informed.
- Our StudentShapers and I-Explore programmes.
- Our support for developing specific areas of the curriculum.
- Our sharing of the outputs, impact and linkages between activities undertaken as part of our Learning and Teaching Strategy.

Aim 1: Assessment and feedback

Imperial curricula were reviewed as a priority during the first phase of our Learning and Teaching Strategy. Despite these efforts, both staff and students have expressed the view that improving assessment and feedback should remain a key priority going forward. This is particularly evident in the general lack of increasing satisfaction with assessment and feedback in Imperial's National Student Survey results, where the College has consistently ranked in the bottom quartile for too long.

It is important that we re-evaluate the ways in which current practices could negatively impact staff and student workloads. Imperial's teaching community also note that the COVID-19 pandemic has spurred changes in the use of online assessment but has also introduced new debates regarding the implications of this trend.

We will do this by:

- Developing resources to share how different assessment and feedback approaches are being used and how programme teams can manage changes in practice.
- Initiating a university-wide substantial collective effort to rationalise how we assess students and enhance their feedback, while reducing workload for staff and students.
- Providing consistent and enhanced information to students regarding the assessments for their modules and the feedback they should expect.
- Understanding how the implications of new technologies such as generative AI may impact on assessment and feedback practices for both students and staff.
- Undertake evaluation activities to determine whether the revised approaches taken by the university are recognised by students as improving their experience in this area.

Aim 2: Discovery-based learning

Our degree programmes should provide students with the opportunity to learn through discovery. They should gain a deep disciplinary knowledge and develop the skills required for future careers that don't yet exist. We should deliver these opportunities within an environment that provides chances for experimentation, failure and refinement, in keeping with our culture of academic enquiry in which our educational experience is embedded.

The work undertaken by departments and faculties as part of our curriculum review has deepened opportunities for students to learn in a range of interactive and collaborative environments, to undertake formative assessment to aid their learning, and to support the development of transferable skills. This activity has identified the numerous ways in which discovery-based learning can be further embedded in students' experience in the coming years.

We will do this by:

- Providing more opportunities for students to study in a cross-disciplinary way, equipping them with the problem-solving and emotional skills they will need for the future.
- Continuing to align our world-leading research with the learning experience, reinforcing our position as a leading research-led educator.
- Further investing in interactive classrooms and laboratories, combined with an increased use of engaging learning techniques.
- Working ever closer with our industry partners, offering partnerships with the world-changing organisations which our students aspire to join.
- Ensuring that opportunities exist for the sharing of open and subscription-based content across student groups and disciplines.

Aim 3: Lifelong learning opportunities

A key priority from community feedback is to expand access to Imperial teaching to a wider group of learners. Our community was supportive of developing lifelong learning opportunities, while taking staff workloads and the student experience into consideration.

The priority is positioned alongside the Government's commitment to bridge existing UK skills gaps to ensure lifetime access to learning and training. This is an opportunity for Imperial to leverage our specialist position as a STEMB institution. By providing these opportunities we can reinforce our reputation as a world leader in digitally enhanced and innovative education. Our next phase aims to position Imperial as a constant companion in the lives of our students and alumni, so they can upgrade their skills and knowledge.

We expect this aim to result in increased student access, increased acceptance of offers, a stronger 'pipeline' of studying throughout individuals' lives, and greater global reach for Imperial. There is also the potential to strengthen our outreach activity via new opportunities which a lifelong learning provision could facilitate.

We will do this by:

- Developing a strategy for lifelong learning as part of Imperial's 'Science for Humanity' strategy, led by an Associate Provost (Digital Lifelong Learning).
- Scoping the development of a variety of forms of lifelong learning including enveloping relevant existing activities and pursuing a small number of proof-of-concept activities to understand public demand and viable delivery models.
- Considering the development of new, open, and fully online courses and programmes, including the use of 'micro credentials' and 'stackable' degrees.
- Building a strong business case to grow lifelong learning activities across Imperial's portfolio of academic disciplines.
- Identifying opportunities where Imperial's approach to lifelong learning can foster an increasingly diverse student community.



Research in the undergraduate mechanical engineering lab



Third-year undergraduate field trip to Sardinia



EdTech showcase of emerging VR

“The high quality of our research and teaching is underpinned and enabled by an environment where staff and students alike are valued and supported.”

Ian Walmsley CBE FRS
Provost

Aim 4: Digital education capabilities

Upon launch, the Learning and Teaching Strategy set out a vision for the use of digital and online technology at Imperial to better apply interactive teaching techniques and to enhance a sense of collaboration and community between students in the classroom and studying online. This vision was accelerated through the university’s response to the COVID-19 pandemic. It is now being refined through the work of the Faculty EdTech teams, the Interdisciplinary EdTech Lab, the Digital Media Lab, and partners in ICT.

Our digital education infrastructure must develop into a world-class ecosystem. It must enable seamless digitally supported teaching and learning across the student experience, both on and off campus. A new Learning Management System (LMS) platform will be procured and adopted, and we will evaluate other digital teaching tools. We will also continue to invest in specialist staff communities to deliver technology-enhanced educational programmes. The activities outlined in this aim now supersede the objectives outlined in Imperial’s Digital Learning Strategy published in 2017.

We will do this by:

- Further investing in the use of novel digital technologies for education to offer deep, experiential learning opportunities in a virtual environment.
- Investing in a distinct number of virtual spaces and technologies to rethink the use of our campus footprint to provide the most valuable in-person education opportunities.
- Developing the collection and use of data in our decision-making by enhancing our learning analytics capabilities to deepen our insight as an institution.
- Considering the mix of digital vs. on-campus delivery, monitoring the impact on staff and student workloads to ensure that new delivery methods do not increase this.
- Enabling joined-up collaboration across the university to ensure that new technologies are implemented and governed with a mind to ethical and equitable practice.

Aim 5: Supportive environment

Imperial has made great strides in recent years to create a supportive environment, challenge those that don’t live up to our values, and ensure a healthy learning and working experience for all students and staff. Likewise, we believe a community in which different backgrounds and cultures are celebrated is critical to excellence in education.

Through the development of our digital educational programmes we see many opportunities to increase our appeal to a broader range of students across the UK and wider world. To achieve this, we must commit to further developing a supportive and diverse environment that fosters a sense of community for students and staff, values teaching as highly as research, supports innovation, and engages students in positive change.

We will do this by:

- Supporting staff and students to turn diverse backgrounds and cultures into an opportunity for mutual learning of different experiences and perspectives.
- Working to embed sustainability, social responsibility, and equality, diversity and inclusivity as values and objectives within Imperial’s education.
- Establishing a culture that values teaching as highly as research. A key aspect of this is striving for parity of esteem for teaching.
- Supporting innovation by creating time for staff to step back from existing workloads and recognising their contributions consistently across the institution.
- Engaging students in positive change by establishing ways for them to contribute to their own and their peers’ educational experience.

Additional supporting activities

We must also recognise the large range of activities and initiatives that enable the wider student experience alongside educational delivery. This spans student support services, providing opportunities beyond the classroom, and the services and technologies that underpin the experience for staff and students alike.

Key activities which will support our objectives in the coming years are:

- The Imperial Experience academic strategy project, focusing on the experience of students beyond the learning environment.
- Implementation of Imperial’s Mental Health and Wellbeing Strategy, and the strengthening of support for specific communities of students.
- The work of the Student Lifecycle Administration Product Line Board (SLAB) and Teaching & Learning Board, who are re-imagining the underpinning systems for student administration, assessment management, teaching delivery and AV.
- Integrating systems through a Unified Data Platform (UDP) to allow for a single source of truth for information and a reduction in data duplication.
- Development of services and physical infrastructure at campuses away from South Kensington, in particular at White City.

Our Graduates

An Imperial education should optimally prepare our students for their future careers. As active contributors to our collaborative, inclusive and diverse academic community, Imperial students will gain skills that prepare them to tackle humanity's most complex global problems.

Our aim for our graduates is that they will:

- Demonstrate deep conceptual understanding of their chosen discipline.
- Utilise exacting technical, digital and entrepreneurial knowledge and skills.
- Work effectively in multi-cultural, international teams and across disciplinary boundaries.
- Approach challenges with curiosity, flexibility, critical thinking and creativity.
- Innovatively apply their skills to tackling complex real-world problems.
- Understand and value different cultures and perspectives, communicating across cultural and societal boundaries.
- Have developed into independent learners with high self-efficacy and emotional resilience.
- Display a strong sense of personal and professional identity.

Imperial will continue to offer all its students a world-leading, rigorous, evidence-based, modern educational experience embedded in a vibrant research environment.

We aim to be:

- Recognised as globally outstanding in STEM.
- Acknowledged as a leader in technology-enhanced, innovative higher education practice.
- Known for combining evidence-based teaching with community building, working with students as partners, focusing on global challenges and teaching students 21st-century skills.
- Renowned for applying the evidential rigour of our research to the evaluation and enhancement of our education practice.
- Sought out by the world's leading educators as a source of inspiration, aspiration and collaboration.

Our intentions for a world-class educational experience remain as being research-based, student-centred, evidence-based, inclusive and diverse, outward-looking, and technologically enhanced.

“It’s the people and my department that have made my Imperial experience. It’s such a lovely community and it feels like a second home.”

Paulina

Chemical Engineering undergraduate



Graduating students in the Royal Albert Hall

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imperial.ac.uk/about/education