The Smart Buildings and Digital Engineering (SBDE) MSc offers a thorough grounding in the science and engineering building systems integration. Drawing upon the world-leading research conducted in this field at The Bartlett’s Institute for Environmental Design and Engineering, and exploiting strong industry links, it provides students with the knowledge and skills to excel in relevant industry roles or pursue research at the doctoral level.

**Degree summary**

The programme is informed by the latest research advances and the evolving needs of the industry. You will learn about integrated building design, advanced modelling and simulation, energy management systems, and performance evaluation. You will develop the expertise to utilise hard-edged engineering methods and quantitative and qualitative tools to test and evolve your designs, integrating quantitative performance considerations.

The SBDE MSc offers exceptional university graduates the opportunity to become experts in this innovative and developing discipline. We aspire to generate technology leaders, capable of delivering high-performance solutions in the engineering design of building systems.

The SBDE MSc is delivered by the UCL Institute for Environmental Design and Engineering (IEDE), building upon strong links with industry and multidisciplinary research undertaken at The Bartlett. Teaching is delivered at the Bloomsbury campus and UCL’s new Here East facility in East London: you will benefit from access to the creative hub in Here East and access to modern lab spaces and equipment.

The programme is delivered through a combination of lectures, seminars, tutorials, problem-based learning, hands-on laboratory sessions and project work. Assessment is through a combination of methods: written coursework, group work with a design component, individual and group-based project work, unseen examinations, and by dissertation.

**Degree structure**

Mode: Full-time: 1 year; Part-time: 2 years; Flexible: up to 5 years

Location: London, Hackney Wick (Here East) and London, Bloomsbury

Full-time students study for 37.5 hours per week during term time. Typically, lectures and seminars occur on two days per week. Flexible students normally attend half this amount.

Students undertake modules to the value of 180 credits. The programme consists of six compulsory modules (90 credits), two optional modules (30 credits) and a dissertation (60 credits).

A Postgraduate Diploma, six compulsory modules (90 credits), three optional modules (30 credits), full-time nine months or flexible/modular up to five years is offered.

A Postgraduate Certificate, four modules (60 credits) - at least three selected from the Core Modules - part-time nine months or flexible/modular up to five years is offered.

Please note that the list of modules given here is indicative. This information is published a long time in advance of enrolment and module content and availability is subject to change.

**COMPULSORY MODULES**

- Building Systems Physics
- Engineered Environmental Elements
- Building Systems Modelling and Energy Management Systems
- Building Systems Development and Operation
- Integrated Building Systems Simulation
- Integrated Building Design for Health and Wellbeing

**OPTIONAL MODULES**

- Indoor Air Quality in Buildings
- Light, Lighting and Wellbeing in Buildings
- Multi-Objective Design Optimisation
- Building Acoustics
- Post-occupancy Evaluation
- Low-Energy Housing Retrofit

The list of optional modules is correct for the 2019/20 academic year. Enrolment on modules is subject to availability.

**DISSERTATION/REPORT**

- All students undertake an independent research project which culminates in a 10,000-word dissertation.

Students will have the opportunity to participate in a field trip in term one which will include a mix of workshops, seminars and team building activities. Students will have the opportunity to participate in site visits throughout the duration of the programme.

The costs of the field trip are covered by the department. Site visits that are within the Transport for London area and which are optional may incur additional transport costs.
Your career

Successful graduates will be equipped with the skills and knowledge required for engineering and specialist roles in companies that provide engineering, design, planning and consulting services for the built environment.

Companies that specialise in building services engineering, operations, building controls and energy systems, as well as high-tech companies seeking to deliver disruptive solutions and digital innovation in the built environment will be particularly interested in employing this programme’s graduates, as will public sector agencies and government departments concerned with the built environment, resource efficiency, and energy management.

The programme provides an ideal foundation for further doctoral and industrial research pathways and can lead to a career in research.

Employability

You will gain strong core knowledge and hands-on experience with monitoring and energy management systems, and applying industry standards. You will use simulation tools including EnergyPlus, DesignBuilder and will become familiar with modelling languages like Modelica. These skills are highly sought after in industry.

An advisory group provides guidance to ensure content and project briefs are relevant to industry needs. Guest lecturers will be drawn from industry.

You will gain the confidence to undertake large interdisciplinary projects with many unknowns and uncertainties, learning to coordinate work, integrate across disciplines, and make balanced decisions, thus preparing you for professional life.
Entry requirements

A second-class or higher UK Bachelor's degree, or an overseas qualification of an equivalent standard, is required.

English language proficiency level

If your education has not been conducted in the English language, you will be expected to demonstrate evidence of an adequate level of English proficiency.

The level of English language proficiency for this programme is: Standard.

Information about the evidence required, acceptable qualifications and test providers is provided at: www.ucl.ac.uk/graduate/english-requirements

Your application

Students are advised to apply as early as possible due to competition for places. Those applying for scholarship funding (particularly overseas applicants) should take note of application deadlines.

When we assess your application we would like to learn:

- why you want to study at graduate level Smart Buildings and Digital Engineering
- why you want to study Smart Buildings and Digital Engineering at UCL
- what particularly attracts you to the chosen programme
- how your academic and professional background meets the demands of this challenging programme
- where you would like to go professionally with your degree.

Together with essential academic requirements, the personal statement is your opportunity to illustrate whether your reasons for applying to this programme match what the programme will deliver.

There is an application processing fee for this programme of £75 for online applications and £100 for paper applications. Further information can be found at: www.ucl.ac.uk/prospective-students/graduate/taught/application.

FEES AND FUNDING 2019/20 ENTRY

- UK: £14,040 (FT), £6,960 (PT)
- EU: £14,040 (FT), £6,960 (PT)
- Overseas: £25,150 (FT), £12,510 (PT)

The tuition fees shown are for the year indicated above. Fees for subsequent years may increase or otherwise vary. Further information on fee status, fee increases and the fee schedule can be viewed on the UCL Students website.

Fees for flexible, modular study are charged pro-rata to the appropriate full-time Master's fee taken in an academic session.

Full details of funding opportunities can be found on the UCL Scholarships website: www.ucl.ac.uk/scholarships

APPLICATION DEADLINE

All applicants: 26 July 2019
Flexible/Modular: 30 August 2019

Details on how to apply are available on the website at: www.ucl.ac.uk/graduate/apply

CONTACT

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EU referendum

For up-to-date information relating to specific key questions following the UK's decision to leave the EU, please refer to www.ucl.ac.uk/brexit