



University of the
West of England

PROGRAMME SPECIFICATION

Part 1: Information	
Awarding Institution	University of the West of England
Teaching Institution	University of the West of England and The Centre for Window and Cladding Technology
Delivery Location	Frenchay Campus
Study abroad / Exchange / Credit recognition	None
Faculty responsible for programme	Faculty of Environment and Technology (FET)
Department responsible for programme	Department of Architecture and the Built Environment (ABE)
Professional Statutory or Regulatory Body Links	None
Highest Award Title	MSc Façade Engineering
Default Award Title	None
Interim Award Titles	Postgraduate Diploma Façade Engineering Postgraduate Certificate Façade Engineering
UWE Progression Route	-
Mode of Delivery	FT / PT
ISIS code/s	UCAS (ISIS2 K90D12) – JACS (HESA)
For implementation from	Sept 2017

Part 2: Description**Background:**

The technology of building envelopes applied to non-traditional commercial building facades has changed rapidly in the closing decades of the twentieth century. Today the technology of advanced building envelopes is more complex than that of simpler traditional construction. This technology is, furthermore, applied to an ever-greater proportion of buildings. However, the training of building professionals has not kept pace with these changes.

The various aspects of façade performance may be considered to fall within the domain of specialists such as the structural engineer (structures), building services engineer (physics) and architect (materials). However, not all issues of facade performance can be easily allocated in this way. Furthermore, the structural engineer and building services engineer on a project may not play an active role in the façade design.

Whilst the design of facades used to rely heavily on precedent and current practice interpreted by generalist building designers this is no longer a viable design or assessment process for many buildings. The move to the use of engineered walls has created a need for specialist façade engineers, designers and analysts, who can understand the new technical complexities of wall design and performance.

Until recently specialist façade contractors played a very small role in the design of facades. Their principal responsibility was the manufacture of components to standard detail drawings and contract management. Today, specialist subcontractors are expected to undertake structural and thermal calculations, select materials and take responsibility for things such as glass performance and safety. Much of the detailed design of a facade is undertaken by these companies who have had in the course of some ten years to develop competence widely across a company where non previously existed.

The Course:

This Masters programme provides a route for graduates, practice professionals or those in specialist manufacturing & installation industries to gain academic qualifications in Façade Engineering. Graduate subjects may range from Architecture & Structural Engineering to Building Services Engineering and Energy Management.

The course aims to provide a broad view of façade engineering and create individuals with an appreciation of all aspects of façades and the relevant processes of procurement, design and construction. Some will have a greater depth in some particular aspect of facades, normally by virtue of their earlier training.

The Façade Engineering Masters is run in collaboration with the Centre for Window and Cladding Technology (CWCT) and associated UK companies. Its formation back in 1995 was part of an integrated response to the needs of the industry as identified by Sylvester Bone *Defects in Buildings* in 1989.

The course recognises the recent history of the cladding industry, which includes a rapid change in technology and only a recent change to graduate level recruitment into the industry. It also recognises that individuals on the course may come from many different backgrounds.

Recruitment onto any Master's Degree course is normally restricted to those with a good first degree. However, the modules of this course may be taken as CPD. Individuals who show ability on the CPD courses may transfer to the Diploma or Masters course. This along with the ability to study for the MSc in part-time mode makes the course accessible to mature students who have between five and twenty years' experience in the industry. These are the individuals who are in need of

Part 2: Description

more underpinning knowledge so that they can keep abreast of technological and business change within the cladding industry.

Although organised on a modular basis the aim of the course is to teach a holistic approach to all aspects of building envelope design and construction. The teaching together of people from diverse backgrounds aids this aim so that students gain not only a knowledge of design conflicts and design synergies but also understand the roles and aspirations of the many parties involved in cladding procurement. The outcome is individuals with a broad understanding of cladding who are able to fully participate in design teams considering the initial wall design and who understand the consequences of early decision-making for later design detailing, manufacture and construction.

Programme requirements for the purposes of the Higher Education Achievement Record (HEAR)

The programme aims to allow graduates with either proven architectural and engineering skills or equivalent industry based experience to align themselves with the needs of a profession that seeks to resolve the issues inherent in the design, development and construction of the modern building envelope.

Students completing the course will understand their role as built environment professionals; be able to design facades, conceptualizing their proposals in relation to structure and other associated performance criteria and refine their designs in technical detail. Success in this programme requires students to develop practical and theoretical skills, verbal communication and literacy in report writing.

Regulations

Delete one of the following statements as appropriate

A: Approved to [University Regulations and Procedures](#)

Part 3: Learning Outcomes of the Programme

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

Knowledge and Understanding:

On attendance at and successful completion of all modules and associated coursework students will:

General

- have the ability to work with a range of techniques and research methods
- have the ability to make clear decisions based on relevant and appropriate information
- have an in depth knowledge of this and related disciplines informed by current research backed up by a competent evaluation of current practice.
- continue to learn independently and to develop professionally, including the ability to pursue further research where appropriate

Specific

- be able to identify and deliver the complex requirements of a façade in terms of weather-tightness, structural integrity, environmental performance, quality and appearance
- be able to describe the role of different professionals in the design and construction process and in particular have the ability to communicate the design, performance and construction requirements for a façade to those professionals and specialist sub-contractors, manufacturers and fabricators

Intellectual Skills (Generic)

On attendance at and successful completion of all modules and associated coursework students will:

- develop the necessary oral communication skills to work within in a multi-disciplinary group environment
- have the ability to solve problems in an analytical and innovative way
- be able to communicate in an appropriate and learned way with other professionals, consultants, specialists, contractors and fabricators
- develop the necessary written skills to work within in a multi-disciplinary group environment
- have the ability to communicate design intent and project objectives

Subject / Professional / Practical Skills (subject specific)

On attendance at and completion of all modules and associated coursework students will able to:

- specify the performance and detail of façades in terms of weather-tightness, structural integrity, environmental performance, quality and appearance
- resolve design conflicts with other members of the professional team
- evaluate the structural performance of a facade
- critically assess different methods of sealing the building envelope
- critically assess the effects brought about by the use of different procurement routes
- specify weather-tightness criteria and appropriate testing and analyse the movement of moisture within walls - assess condensation risk and its effects on building envelope performance
- have an in-depth knowledge and understanding of the façade engineering discipline informed by current scholarship and research, including a critical awareness of current issues and developments in the subject
- ability to complete a research project in the subject, including a critical review of existing literature or other scholarly outputs.

Part 4: Programme Structure

This structure diagram demonstrates the student journey from Entry through to Graduation for a typical **full time undergraduate student** including:

- level and credit requirements
- interim award requirements
- module diet, including compulsory and optional modules

Full Time Route

	Compulsory Modules	Optional Modules	Interim Awards
Year 1	(All 15 credits) UBLLYS-15-M Introduction to Facades Systems UBLMFK-15-M Facade Materials & Components UBLMG6-15-M Glass and Glazing UBLMGL-15-M Structural Integrity UBLMH5-15-M Weathertightness UBLMHL-15-M Procurement UBLMJ8-15-M Thermal Performance UBLMJP-15-M Advanced Facades UBLLY7-60-M Dissertation	n/a	Interim award: PG Diploma Façade Engineering 120 credits PG Certificate Façade Engineering 60 credits with at least 40 credits at M level HIGHEST AWARD: MSc Façade Engineering – on successful completion of dissertation or case study (14,000 words or less on agreement and inclusion of drawn material)

Part-Time Route

	Compulsory Modules	Optional Modules	Interim Awards
Year 1	(All 15 credits) UBLLYS-15-M Introduction to Facades Systems Any of the remaining modules	n/a	Interim award: PG Diploma Façade Engineering 120 credits PG Certificate Façade Engineering 60 credits with at least 40 credits HIGHEST AWARD: MSc Façade Engineering – on successful completion of dissertation or case study (14,000 words or less on agreement and inclusion of drawn material)

	Compulsory Modules	Optional Modules	Interim Awards
Year 2	<p>All remaining modules not taken in Year 1</p> <p>UBLLY7-60-M Dissertation</p>	n/a	<p>Interim award:</p> <p>PG Diploma Façade Engineering 120 credits</p> <p>PG Certificate Façade Engineering 60 credits with at least 40 credits at M level</p> <p>HIGHEST AWARD: MSc Façade Engineering – on successful completion of dissertation or case study (14,000 words or less on agreement and inclusion of drawn material)</p>

Part 5: Entry Requirements

The University's Standard Entry Requirements apply with the following additions/exceptions*:

- An honours degree of 2:1 or above in an engineering, built environment or architecture related subject
- A first degree in an engineering, built environment or architecture related subject from an overseas institution that can be demonstrated to be equivalent to the above
- An honours degree of 2:2 in an engineering, built environment or architecture related subject plus a minimum of 2 years in professional practice
- An honours degree of 2:2 in an engineering, built environment or architecture related subject plus a minimum of 2 years in a related industry
- Any other nonstandard route will need to be assessed on individual basis but will require a minimum of 5 years in an appropriate/ related industry

You may be invited for interview (via video conferencing for overseas applicants) on the basis of a formal application. Applicants demonstrating appropriate experience, skills and ability at interview will be offered a place.

Part 6: Reference Points and Benchmarks

Description of how the following reference points and benchmarks have been used in the design of the programme:

The curriculum, learning methods, aims and learning outcomes of this award respond to the following:

QAA publications subject benchmark statements:

Part 6: Reference Points and Benchmarks

QAA Engineering benchmark statement 09/2010
QAA Construction, property and surveying benchmark statement 2008

We also have looked at:

UWE Employability Strategy
QAA code of practice: section 8 Career Education, information, advice and guidance
UWE Widening Participation Strategy
UWE Sustainability Strategy
UWE Teaching and Learning Strategy

The programme design team has taken full account of the UWE Bristol Strategy 2020, specifically the themes "Ready and able graduates", "Outstanding learning and Strategic partnerships" and "Connections and networks" (the 4th theme of "Research with Impact" has also been considered in terms of research-informed teaching, where students are exposed to ideas and techniques which form the research interests of teaching staff). The MSc programme is linked with employers, institutions and other bodies throughout the Centre for Window and Cladding Technology.

Staff research projects

Staff who are likely to be teaching on the programme are engaging with research across a wide variety of fields, which are relevant and pertinent to Facade Engineering, including overheating, glass and glazing, structural integrity and weathertightness.

FOR OFFICE USE ONLY

First CAP Approval Date	31 January 2017			
Revision CAP Approval Date		Version	1	Link to MIA
Next Periodic Curriculum Review due date				
Date of last Periodic Curriculum Review				