Course Specification

A Course Information

Final award title(s)	MSc Structural Engineering	**Course Code(s)**	FT 5352 PT 5353
Intermediate award title(s)	PgCert Structural Engineering; PgDip Structural Engineering		
Awarding Institution	London South Bank University		
School	☐ ASC ☐ ACI ☒ BEA ☐ BUS ☐ ENG ☐ HSC ☐ LSS		
Division	Civil and Building Services Engineering		
Delivery site(s) for course(s)	☒ Southwark ☐ Havering ☐ Other: please specify		
Mode(s) of delivery	☒Full-time ☒Part-time ☐ Both		
Length of course			

Mode	Length years	Start - month	Finish - month
Full-time (Jan start)	1	January	May
Part time (Jan start)	2	January	May

Is this course generally suitable for students on a Tier 4 visa?	Please complete the International Office questionnaire Yes No ✓ Students are advised that the structure/nature of the course is suitable for those on a Tier 4 visa but other factors will be taken into account before a CAS number is allocated.	
Approval dates:	Course(s) validated	November 2019 (Revalidated May 2021)
	Course specification last updated and signed off	May 2021
Professional, Statutory & Regulatory Body accreditation	Joint Board of Moderators (on behalf of the Engineering Council), representing; • The Institution of Civil Engineers • The Institution of Structural Engineers • The Chartered Institution of Highways and Transportation • The Institute of Highway Engineers • The Permanent Way Institution Accredited to 2024 intake	
Reference points:	Internal	- LSBU Mission Statement and Strategic Plan; - LSBU Core Skills Policy; - LSBU Academic Regulations

	External	- Engineering Council, Accreditation of Higher Education Programmes (Third Edition 2014); - Joint Board of Moderators Guidelines for Developing Degree Programmes, January 2018 (Version 1 – Revision 2)

B Course Aims, Features and Outcomes

Distinctive features of course	This is an advanced postgraduate course specialising in structural engineering covering advanced structural analysis and design, structural computing simulation and also offering modules linked with steel, concrete, timber and other structural designs. The taught modules focus on learning advanced methods and techniques while developing analytical skills across a range of structural engineering topics. The course will also provide students with knowledge to design structures under dynamic and earthquake conditions.
Course Aims	**The MSc Structural Engineering course aims to:** 1. Produce graduates who are committed to a career in structural engineering with a range of employers. 2. Produce graduates equipped to take up professional employment in the construction industry and become lifelong learners with an appreciation of the value to society of an education in structural engineering. 3. Produce graduates who have knowhow and understanding of the key aspects of structural engineering. 4. Allow graduates to acquire and develop problem-solving skills, and subject-specific skills. 5. Develop graduates who bring practical solutions to design problems and who have the technical skills to see their ideas through to realisation. 6. Provide an opportunity to those in full-time employment to study towards a degree in structural engineering on a part-time basis. 7. Create a unique educational environment that seeks to benefit from the practical experience of mature and part-time students. 8. Provide an engineering education centred within the built environment that recognises the important roles of other professions in the development of the built environment and cultivates interaction and teamwork with these other professionals. 9. Provide graduates with the necessary further learning which will provide the full educational base for a Chartered Engineer.
Course Outcomes	The course outcomes have been developed with reference to the JBM guidelines and Engineering Council's Accreditation of Higher Engineering Programmes document, Third Edition (2014). The number and letter in brackets e.g. (SM2m) refer to the Learning Outcomes described in Engineering Council Documentation (Appendix C). The curriculum map showing the modules in which the material that each of the learning outcomes covers is taught, developed and assessed is in Appendix A. **a)** Students will have **knowledge and understanding** of:

	A1: A comprehensive knowledge and understanding of scientific principles and methodology necessary to underpin their education in their engineering discipline, and an understanding and know-how of the scientific principles of related disciplines, to enable appreciation of the scientific and engineering context, and to support their understanding of relevant historical, current and future developments and technologies. (SM1m) A2: Knowledge and understanding of mathematical and statistical methods necessary to underpin their education in their engineering discipline and to enable them to apply a range of mathematical and statistical methods, tools and notations proficiently and critically in the analysis and solution of engineering problems. (SM2m) Ability to apply and integrate knowledge and understanding of other engineering disciplines to support study of their own engineering discipline and the ability to evaluate them critically and to apply them effectively. (SM3m) A3: Understanding the need for a high level of professional and ethical conduct in engineering and knowledge of professional codes of conduct. (EL1m) A4: Knowledge and understanding of the commercial, economic and social context of engineering processes. (EL2) A5: Knowledge of management techniques, including project and change management that may be used to achieve engineering objectives, their limitations and how they may be applied appropriately. (EL3m) A6: Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate (EL4m) A7: Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues, and an awareness that these may differ internationally. (EL5m) A8: Knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, risk assessment and risk management techniques and an ability to evaluate commercial risk. (EL6m) **b)** Students will develop their **intellectual skills** such that they can: B1: Understand engineering principles and apply them to undertake critical analysis of key engineering processes. (EA1m) B2: Identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques. (EA2) B3: Apply quantitative and computational methods, using alternative approaches and understand their limitations, in order to solve engineering problems and to implement appropriate action. (EA3m) B4: Understand and apply, an integrated or systems approach to solving engineering problems. (EA4) B5: Understand and evaluate business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics. (D1)

	B6: Investigate and define the problem, identifying any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards. (D2) B7: Work with information that may be incomplete or uncertain, quantify the effect of this on the design and where appropriate, use theory or experimental research to mitigate deficiencies. (D3m) B8: Apply advanced problem-solving skills, technical knowledge and understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal. (D4) B9: Plan and manage the design process, including cost drivers, and evaluate outcomes. (D5) B10: Communicate their work to technical and non-technical audiences. (D6) **c)** Students will acquire and develop **practical skills** such that they: C1: Understand contexts in which engineering knowledge can be applied (for example operations and management, application and development of technology, etc.). (P1) C2: Acquire knowledge of characteristics of particular equipment, processes or products, with extensive knowledge and understanding of a wide range of engineering materials and components. (P2m) C3: Apply relevant practical and laboratory skills. (P3) C4: Understand the use of technical literature and other information sources. (P4) C5: Acquire knowledge of relevant legal and contractual issues. (P5); and understanding of appropriate codes of practice and industry standards. (P6) C6: Develop awareness of quality issues and their application to continuous improvement. (P7); Ability to work with technical uncertainty. (P8) C7: Understand different roles within an engineering team and the ability to exercise initiative and personal responsibility, which may be as a team member or leader. (P11m). **d)** Students will acquire and develop **transferable skills** such that they are able to: D1: Apply their skills in problem-solving, communication, information retrieval, working with others and the effective use of general IT facilities. (G1) D2: Plan self-learning and improve performance, as the foundation for lifelong learning/CPD. (G2) D3: Monitor and adjust a personal programme of work on an on-going basis (G3m) D4: Exercise initiative and personal responsibility, which may be as a team member or leader. (G4)

C Teaching and Learning Strategy

A Knowledge and understanding

Through a combination of lectures, seminars, tutorials, practical classes, coursework, design, computer sessions, project work and self-study. Throughout the course students have module guides relevant to each topic of study, giving additional reading material, which students are encouraged to use for private study to consolidate the formal learning process, and both broaden and deepen their knowledge and understanding in the subject area.

B Intellectual skills

Intellectual skills are developed throughout the course of teaching and learning. Analysis and problem-solving skills are further developed through regular tutorial sheets and design-based exercises. Experimental, research and design skills are further developed through coursework exercises, laboratory, research and design projects.

C Practical Skills

Practical skills are developed through the teaching and learning course. Experimental skills are developed through laboratory experiments and project work.

D Transferrable Skills

Transferrable skills are developed through a combination of coursework, presentations, provision of module guides, setting coursework deadlines, laboratory experiments, project work, design work and individual learning.

D Assessments

A Knowledge and understanding

Testing of the knowledge base is through a combination of unseen written examinations, closed book tests, essays, oral presentations, design exercises, laboratory reports, poster displays and individual projects.

B Intellectual skills

Analysis and problem-solving skills are assessed through unseen written examinations and class tests. Experimental, research and design skills are assessed through laboratory reports, coursework exercises, project reports, poster displays and oral presentations.

C Practical Skills

Through a mixture of coursework exercises, laboratory reports, presentations, oral examinations, unseen written examinations, computer-based projects, and individual investigative-based projects.

D Transferrable Skills

Transferrable skills are assessed through a mixture of coursework exercises, laboratory reports, presentations, oral examinations, unseen written examinations, computer-based projects, and individual investigative-based projects.

E Academic Regulations

The University's Academic Regulations apply for this course. Any course specific protocols will be identified here.

http://www.lsbu.ac.uk/__data/assets/pdf_file/0008/84347/academic-regulations.pdf

The lowest mark in an Assessment that can be compensated is 40%.

F Entry Requirements

In order to be considered for entry to the course applicants will be required to have one of the following qualifications:

- An undergraduate Civil Engineering degree with a minimum of a BEng (Hons) – Lower Second (2.2) classification, or equivalent; or
- An undergraduate Civil Engineering or Architectural Engineering degree with a minimum of a BSc (Hons) – Upper Second (2.1) classification, or equivalent; or
- Applicants with appropriate relevant professional experience deemed to be equivalent to a first degree will also be considered.

For applicants whose first language is not English, an IELTS score of 6.5 or equivalent is required.

G Course Structure

The Course is run on Thursdays and Fridays. Part-time students initially attend one day a week on Thursdays in their first year; in their second year, they attend one day a week on Fridays.

Module Title	Module Code	Semester	Assessment	Weighting CW/EX	Mode / Day / Time
Soil-Structure Engineering	BEA/7/499	2	CW/EX	30/70	FT & PT1, Thurs am
Structural Dynamics and Earthquake Engineering	BEA/7/500	2	CW/EX	30/70	FT & PT1, Thurs pm
Advanced Computing and Structural Simulation	BEA/7/498	2	CW/EX	100 CW	FT & PT2, Friday am
Advanced Structural Design	BEA/7/449	1	CW/EX	30/70	FT & PT1, Thurs am
Finite Elements and Stress Analysis	BEA/7/494	1	CW/EX	50/50	FT & PT1, Thurs pm
Masonry and Timber Engineering	BEA/7/496	1	CW/EX	30/70	FT & PT2, Friday am
Project (three modules value)	BEA/7/497	1,2	Dissertation	100 CW	FT & PT2, Friday pm

CW/EX: Coursework / Examination

H Course Modules

Module Code	Module Title	Semester	Credit value	Assessment CW / EX
BEA/7/499	Soil-Structure Engineering	2	20	30/70
BEA/7/500	Structural Dynamics and Earthquake Engineering	2	20	30/70
BEA/7/498	Advanced Computing and Structural Simulation	2	20	100 CW
BEA/7/449	Advanced Structural Design	1	20	30/70
BEA/7/494	Finite Elements and Stress Analysis	1	20	50/50
BEA/7/496	Masonry and Timber Engineering	1	20	30/70
BEA/7/497	Project (three modules value)	1-2	60	100 dissertation

J Costs and financial Support

Information on tuition fees/financial support can be found by clicking on the following link –

http://www.lsbu.ac.uk/courses/undergraduate/fees-and-funding or
http://www.lsbu.ac.uk/courses/postgraduate/fees-and-funding

Information on living costs and accommodation can be found by clicking the following link-

https://my.lsbu.ac.uk/my/portal/Student-Life-Centre/International-Students/Starting-at-LSBU/#expenses

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Appendix A: Curriculum Map

Module		Course Outcomes										
		SM1m	SM2m	EL1m	EL2	EL3m	EL4	EL5m	EL6m			
Title	**Code**	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**			
Advanced Structural Design	BEA/7/449	TD	DA	TDA	DA		D	TDA				
Finite Elements and Stress Analysis	BEA/7/494	TDA	TD									
Masonry and Timber Engineering	BEA/7-496	TD	D	D	D		TDA					
Soil-Structure Engineering	BEA/7/499		TD			TDA	D					
Structural Dynamics and Earthquake Engineering	BEA/7/500	TDA	TDA		D		D	TDA	DA			
Advanced Computing and Structural Simulation	BEA/7/498	TD	TD			D						
Project (three modules value)	BEA/7/497	D	D									
		EA1m	**EA2**	**EA3m**	**EA4**	**D1**	**D2**	**D3m**	**D4**	**D5**	**D6**	
Title	**Code**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**B8**	**B9**	**B10**	
Advanced Structural Design	BEA/7/449	TD	D	D	D	DA		D	TD	D	D	
Finite Elements and Stress Analysis	BEA/7/494	TDA	TD	TD	D			D	DA		D	
Masonry and Timber Engineering	BEA/7-496	TD	D	D			DA	D	D			
Soil-Structure Engineering	BEA/7/499	TDA	D	D				D	TD		D	
Structural Dynamics and Earthquake Engineering	BEA/7/500	TD	D	TD	D			D	D			
Advanced Computing and Structural Simulation	BEA/7/498		D	TD	D			DA	TD		D	
Project (three modules value)	BEA/7/497	DA		DA			D	D	D		DA	
		P1	**P2m**	**P3**	**P4**	**P5**	**P6**	**P7 + P11m**	**G1**	**G2**	**G3**	**G4**
Title	**Code**	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**D1**	**D2**	**D3**	**D4**
Advanced Structural Design	BEA/7/449	DA	TDA		DA		TD	D	TDA			D
Finite Elements and Stress Analysis	BEA/7/494		TDA	DA					TD			
Masonry and Timber Engineering	BEA/7-496	D	TDA		D	D			TD		D	D
Soil-Structure Engineering	BEA/7/499	D		DA	D		D	D	TD			D
Structural Dynamics and Earthquake Engineering	BEA/7/500	D	D	D	D		D		D			
Advanced Computing and Structural Simulation	BEA/7/498	D	TD	TD				D	TD	D		D
Project (three modules value)	BEA/7/497	DA	D	DA	TD	D			D	DA	DA	DA

T: taught; D: developed; A: assessed

Appendix B: Personal Development Planning

1	Supporting the development and recognition of skills through the personal tutor system.	The Course Director is the personal tutor of all the students (full-time and part-time). This is brought to the attention of all students at induction and regularly during the year. Each student will be offered a 15 minutes interview with the Personal Tutor, once in each of the two semesters; items discussed will be noted in the students' PDP diary.
2	Supporting the development and recognition of skills in academic modules.	All modules are structured so that the combination of courseworks introduce and develop the technical skills at the post-graduate level in the fields of experimentation, hands-on computer modelling, design exercises, critical analysis, analysis methodologies, data interpretation and verification, research methodologies. Assessed coursework, in stages, provide the feedback for the consolidation and improvement of these academic skills.
3	Supporting the development and recognition of skills through purpose designed modules.	The modules have been designed to support the development of skills in civil and structural engineering.
4	Supporting the development and recognition of skills through research projects and dissertation works.	Students will develop research skills in a variety of the modules, but in particular in the project module.
5	Supporting the development and recognition of career management skills.	An academic staff, who is the Liaison Officer for the Institution of Civil Engineers briefs the students on the benefits of the student membership of the institution. The London Branch of the Institution of Civil Engineers visits the students on site and briefs them about the activities and the benefits of the membership of the local activities, and routes to Chartership. Similar links through academic staff will be formed with other relevant professional bodies including the Chartered Institute of Highways and Transportation, the Institution of Highway Engineers, and the Institution of Structural Engineers. Students are encouraged to use the LSBU Careers Office for CV preparation, interview skills, job vacancies.
6	Supporting the development and recognition of skills through work placements or work experience.	Not applicable.
7	Supporting the development of skills by recognising that they can be developed through extracurricular activities.	Field trips and site visits are organised by members of the teaching team throughout the academic year.
8	Supporting the development of the skills and attitudes as a basis for continuing professional development.	Notices of lectures and presentations at the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institute of Highways and Transportation and the Institution of Highway Engineers are brought to the students' attention.
9	Other approaches to personal development planning.	Not applicable.
10	The means by which self-reflection, evaluation and planned development are supported, e.g. electronic or paper-based learning log or diary.	Weekly meetings for the Project between the student and the supervisor. Written and/or verbal feedback on assessed coursework.

Appendix C: Learning Outcomes
Correlation between JMB and LSBU codes on Learning Outcomes

JMB Guidelines January 2018			Course Outcomes LSBU	
Science and Mathematics (SM)	SM1m	Knowledge and understanding of scientific principles and methodology necessary to underpin their education in their engineering discipline, to enable appreciation of its scientific and engineering context, and to support their understanding of relevant historical, current and future developments and technologies	A1	**Knowledge and Understanding**
	SM2m	Knowledge and understanding of mathematical and statistical methods necessary to underpin their education in their engineering discipline and to enable them to apply mathematical and statistical methods, tools and notations proficiently in the analysis and solution of engineering problems	A2	
	SM6m	Ability to apply and integrate knowledge and understanding of other engineering disciplines to support the study of their own engineering discipline		
Engineering and Analysis (EA)	EA1m	Understanding of engineering principles and the ability to apply them to undertake critical analysis of key engineering processes.	B1	**Intellectual Skills**
	EA2	Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques	B2	
	EA3m	Ability to apply quantitative and computational methods, using alternative approaches and understanding their limitations, in order to solve engineering problems and to implement appropriate action.	B3	
	EA4	Understanding of, and the ability to apply, an integrated or systems approach to solving engineering problems	B4	
Design (D)	D1	Understand and evaluate the business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics	B5	
	D2	Investigate and define the problem, identifying any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards	B6	
	D3m	Work with information that may be incomplete or uncertain and quantify the effect of this on the design	B7	
	D4	Apply advanced problem-solving skills, technical knowledge and understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal	B8	
	D5	Plan and manage the design process, including cost drivers, and evaluate outcomes	B9	
	D6	Communicate their work to technical and non-technical audiences	B10	

JMB Guidelines January 2018			Course Outcomes LSBU	
Economic, legal, social, ethical and environmental context (EL)	EL1m	Understanding the need for a high level of professional and ethical conduct in engineering and a knowledge of professional codes of conduct and how ethical dilemmas can arise.	A3	**Knowledge and Understanding**
	EL2	Knowledge and understanding of the commercial, economic and social context of engineering processes	A4	
	EL3m	Knowledge and understanding of management techniques, including project management, that may be used to achieve engineering objectives, their limitations, and how they can arise.	A5	
	EL4	Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate	A6	
	EL5m	Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues	A7	
	EL6m	Knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, and risk assessment and risk management techniques and an	A8	
Engineering practice (P)	P1	Understanding of contexts in which engineering knowledge can be applied (for example operations and management, application and development of technology, etc.)	C1	**Practical Skills**
	P2m	Knowledge of characteristics of particular equipment, processes or products, with extensive knowledge and understanding of a wide range of engineering materials and components.	C2	
	P3	Ability to apply relevant practical and laboratory skills	C3	
	P4	Understanding the use of technical literature and other information sources	C4	
	P5	Knowledge of relevant legal and contractual issues	C5	
	P6	Understanding of appropriate codes of practice and industry standards	C5	
	P7	Awareness of quality issues and their application to continuous improvement	C6	
	P8	Ability to work with technical uncertainty	C7	
	P11m	Understanding of different roles within an engineering team and the ability to exercise initiative and personal responsibility, which may be as a team member of leader.	C7	
Additional general skills (G)	G1	Apply their skills in problem-solving, communication, information retrieval, working with others and the effective use of general IT facilities	D1	**Transferable Skills**
	G2	Plan self-learning and improve performance, as the foundation for lifelong learning/CPD	D2	
	G3m	Monitor and adjust a personal programme of work on a on-going basis	D3	
	G4	Exercise initiative and personal responsibility, which may be as a team member or leader	D4	

Appendix D: Educational Framework

This appendix to the course specification document enables course teams to evidence how their courses meet minimum expectations, at what level where appropriate, as the basis for embedding the Educational Framework in all undergraduate provision at LSBU.

Dimension of the Educational Framework	Minimum expectations and rationale	How this is achieved in the course
Curricula informed by employer and industry need	Outcomes focus and professional/employer links All LSBU courses will evidence the involvement of external stakeholders in the curriculum design process as well as plan for the participation of employers and/or alumni through guest lectures or Q&A sessions, employer panels, employer-generated case studies or other input of expertise into the delivery of the course provide students with access to current workplace examples and role models.	The curriculum design is informed by the JBM and the Industrial Advisory Panel at LSBU. Teaching staff on the course are LSBU staff.
Embedded learning development	Support for transition and academic preparedness There should be some embedded learning development in the curriculum to support student understanding of, and familiarity with, disciplinary ways of thinking and practising (e.g. analytical thinking, academic writing, critical reading, reflection). Where possible, learning development will be normally integrated into content modules rather than as standalone modules.	Most taught modules involve analysis of a civil / structural engineering system, a coursework encouraging independent analysis of such a system and finally delivery of a report as part of the coursework.
High impact pedagogies	Group-based learning experiences The capacity to work effectively in teams enhances learning through working with peers and develops student outcomes, including communication, networking and respect for diversity of perspectives relevant to **professionalism** and **inclusivity**. Consideration should be given to how students are allocated to groups to foster experience of diverse perspectives and values.	Group work is introduced in tutorial sessions and in some coursework activities.
Inclusive teaching, learning and assessment	Accessible materials, resources and activities All course materials and resources, including course guides, PowerPoint presentations, handouts and Moodle should be provided in an accessible format. For example, font type and size, layout and colour as well as captioning or transcripts for audio-visual materials. Consideration should also be given to accessibility and the	Students work in diverse groups in labs and project and field trips. Inclusion is guaranteed with the mix of different cohorts during the lectures

	availability of alternative formats for reading lists.	
Assessment *for* learning	<u>Assessment and feedback to support attainment, progression and retention</u> Assessment is recognised as a critical point for at risk students as well as integral to the learning of all students. Formative feedback is very helpful upon commencing study at the University. Assessment and feedback communicates high expectations and develops a commitment to **excellence**.	Tutorial sessions are used to aid student learning and some modules feature formative assessments.
High impact pedagogies	<u>Research and enquiry experiences</u> Opportunities for students to undertake small-scale independent enquiry enable students to understand how knowledge is generated and tested in the discipline as well as prepare them to engage in enquiry as a highly sought after outcome of university study. Research opportunities should build student autonomy and are likely to encourage **creativity** and problem-solving. Dissemination of student research outcomes, for example via posters, presentations and reports with peer review, should also be considered.	The learners undertake their individual research project at the end of the degree; they are prepared for this via weekly research seminars.
Curricula informed by employer and industry need / Assessment *for* learning	<u>Authentic learning and assessment tasks</u> Live briefs, projects or equivalent authentic workplace learning experiences and/or assessments enable students, for example, to engage with external clients, develop their understanding through situated and experiential learning in real or simulated workplace contexts and deliver outputs to an agreed specification and deadline. Engagement with live briefs creates the opportunity for the development of student outcomes including **excellence**, **professionalism**, **integrity** and **creativity**. A live brief is likely to develop research and enquiry skills and can be linked to assessment if appropriate.	Many coursework briefs are based on real-life design scenarios or engineering situations. A number of students choose to study research topics suggested by their employers or in conjunction with external industrial partners.
Inclusive teaching, learning and assessment	<u>Course content and teaching methods acknowledge the diversity of the student cohort</u> An inclusive curriculum incorporates images, examples, case studies and other resources from a broad range of cultural and social views reflecting diversity of the student cohort in terms of, for example, gender, ethnicity, sexuality, religious belief, socio-economic background etc. This commitment to **inclusivity** enables students to recognise	This diversity is guaranteed with a successful mix of full-time and part-time students where the lecturers encourage the learners to share their knowledge.

	themselves and their experiences in the curriculum as well as foster understanding of other viewpoints and identities.	
Curricula informed by employer and industry need	<u>Work-based learning</u> Opportunities for learning that is relevant to future employment or undertaken in a workplace setting are fundamental to developing student applied knowledge as well as developing work-relevant student outcomes such as networking, **professionalism** and **integrity**. Work-based learning can take the form of work experience, internships or placements as well as, for example, case studies, simulations and role-play in industry-standards settings as relevant to the course. Work-based learning can be linked to assessment if appropriate.	As noted above some students on the course are part-time and working in the construction industry where they will have many opportunities to network and undertake work based learning. Field trips and site visits are available for all students.
Embedded learning development	<u>Writing in the disciplines: Alternative formats</u> The development of student awareness, understanding and mastery of the specific thinking and communication practices in the discipline is fundamental to applied subject knowledge. This involves explicitly defining the features of disciplinary thinking and practices, finding opportunities to scaffold student attempts to adopt these ways of thinking and practising and providing opportunities to receive formative feedback on this. A writing in the disciplines approach recognises that writing is not a discrete representation of knowledge but integral to the process of knowing and understanding in the discipline. It is expected that assessment utilises formats that are recognisable and applicable to those working in the profession. For example, project report, presentation, poster, lab or field report, journal or professional article, position paper, case report, handbook, exhibition guide.	Student writing skills are taught and assessed in all modules. These skills are needed to produce the lab reports, field trip reports and group project report that form part of the modules assessments.
High impact pedagogies	<u>Multi-disciplinary, interdisciplinary or interprofessional group-based learning experiences</u> Students should be provided with the opportunity to work and manage more complex tasks in groups that work across traditional disciplinary and professional boundaries and reflecting interprofessional work-place settings. Learning in multi- or interdisciplinary groups creates the opportunity for the development of student	Group project work, a diverse range of engineering topics and a dedicated individual research project aids multidisciplinary learning.

	outcomes including **inclusivity**, communication and networking.	
Assessment *for* learning	<u>Variation of assessment</u> An inclusive approach to curriculum recognises diversity and seeks to create a learning environment that enables equal opportunities for learning for all students and does not give those with a particular prior qualification an advantage or disadvantage. A holistic assessment strategy should provide opportunities for all students to be able to demonstrate achievement of learning outcomes in different ways throughout the course. This may be by offering alternate assessment tasks at the same assessment point, for example either a written or oral assessment, or by offering a range of different assessment tasks across the curriculum.	There are a range of assessments on the course including as follows: Examinations and in class tests. Laboratory Reports. Presentations. Group tutorials. Computer-based design work.
Curricula informed by employer and industry need	<u>Career management skills</u> Courses should provide support for the development of career management skills that enable student to be familiar with and understand relevant industries or professions, be able to build on work-related learning opportunities, understand the role of self-appraisal and planning for lifelong learning in career development, develop resilience and manage the career building process. This should be designed to inform the development of **excellence** and **professionalism**.	As noted above the course is informed by the JBM and the Industrial Advisory Panel at LSBU.
Curricula informed by employer and industry need / Assessment *for* learning / High impact pedagogies	<u>Capstone project/dissertation</u> The research dissertation is a critical point for the integration and synthesis of knowledge and skills from across the course. It also provides an important transition into employment if the assessment is authentic, industry-facing or client-driven. It is recommended that this is a capstone experience, bringing together all learning across the course and creates the opportunity for the development of student outcomes including **professionalism**, **integrity** and **creativity**.	As per the Research Project module.

Appendix E: Terminology

awarding body	a UK higher education provider (typically a university) with the power to award higher education qualifications such as degrees
bursary	a financial award made to students to support their studies; sometimes used interchangeably with 'scholarship'
collaborative provision	a formal arrangement between a degree-awarding body and a partner organisation, allowing for the latter to provide higher education on behalf of the former
compulsory module	a module that students are required to take
contact hours	the time allocated to direct contact between a student and a member of staff through, for example, timetabled lectures, seminars and tutorials
coursework	student work that contributes towards the final result but is not assessed by written examination
current students	students enrolled on a course who have not yet completed their studies or been awarded their qualification
delivery organisation	an organisation that delivers learning opportunities on behalf of a degree-awarding body
distance-learning course	a course of study that does not involve face-to-face contact between students and tutors
extracurricular	activities undertaken by students outside their studies
feedback (on assessment)	advice to students following their completion of a piece of assessed or examined work
formative assessment	a type of assessment designed to help students learn more effectively, to progress in their studies and to prepare for summative assessment; formative assessment does not contribute to the final mark, grade or class of degree awarded to students

higher education provider	organisations that deliver higher education
independent learning	learning that occurs outside the classroom that might include preparation for scheduled sessions, follow-up work, wider reading or practice, completion of assessment tasks, or revision
intensity of study	the time taken to complete a part-time course compared to the equivalent full-time version: for example, half-time study would equate to 0.5 intensity of study
lecture	a presentation or talk on a particular topic; in general lectures involve larger groups of students than seminars and tutorials
learning zone	a flexible student space that supports independent and social earning
material information	information students need to make an informed decision, such as about what and where to study
mode of study	different ways of studying, such as full-time, part-time, e-learning or work-based learning
modular course	a course delivered using modules
module	a self-contained, formally structured unit of study, with a coherent and explicit set of learning outcomes and assessment criteria; some providers use the word 'course' or 'course unit' to refer to individual modules
national teaching fellowship	a national award for individuals who have made an outstanding impact on student learning and the teaching profession
navigability (of websites)	the ease with which users can obtain the information they require from a website
optional module	a module or course unit that students choose to take
performance (examinations)	a type of examination used in performance-based subjects such as drama and music
professional body	an organisation that oversees the activities of a particular profession and represents the interests of its members
prospective student	those applying or considering applying for any programme, at any level and employing any mode of study, with a higher education provider

regulated course	a course that is regulated by a regulatory body
regulatory body	an organisation recognised by government as being responsible for the regulation or approval of a particular range of issues and activities
scholarship	a type of bursary that recognises academic achievement and potential, and which is sometimes used interchangeably with 'bursary'
semester	either of the parts of an academic year that is divided into two for purposes of teaching and assessment (in contrast to division into terms)
seminar	seminars generally involve smaller numbers than lectures and enable students to engage in discussion of a particular topic and/or to explore it in more detail than might be covered in a lecture
summative assessment	formal assessment of students' work, contributing to the final result
term	any of the parts of an academic year that is divided into three or more for purposes of teaching and assessment (in contrast to division into semesters)
total study time	the total time required to study a module, unit or course, including all class contact, independent learning, revision and assessment
tutorial	one-to-one or small group supervision, feedback or detailed discussion on a particular topic or project
work/study placement	a planned period of experience outside the institution (for example, in a workplace or at another higher education institution) to help students develop particular skills, knowledge or understanding as part of their course
workload	see 'total study time'
written examination	a question or set of questions relating to a particular area of study to which candidates write answers usually (but not always) under timed conditions.