



Course Specification

A. Course Information																								
Final award title(s)	HND Chemical Engineering																							
Intermediate exit award title(s)																								
UCAS Code		Course Code(s)	741																					
	London South Bank University																							
School	<input type="checkbox"/> ASC <input type="checkbox"/> ACI <input type="checkbox"/> BEA <input type="checkbox"/> BUS <input checked="" type="checkbox"/> ENG <input type="checkbox"/> HSC <input type="checkbox"/> LSS																							
Division	Chemical & Energy Engineering																							
Course Director	Dr Achilleas Constantinou																							
Delivery site(s) for course(s)	<input checked="" type="checkbox"/> Southwark <input type="checkbox"/> Havering <input type="checkbox"/> Other: please specify																							
Mode(s) of delivery	<input checked="" type="checkbox"/> Full time <input type="checkbox"/> Part time <input type="checkbox"/> other please specify																							
Length of course/start and finish dates	<table border="1"> <thead> <tr> <th>Mode</th> <th>Length years</th> <th>Start - month</th> <th>Finish - month</th> </tr> </thead> <tbody> <tr> <td>Full time</td> <td>2 years</td> <td>September</td> <td>July</td> </tr> <tr> <td>Full time with placement/ sandwich year</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Part time</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Part time with Placement/ sandwich year</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Mode	Length years	Start - month	Finish - month	Full time	2 years	September	July	Full time with placement/ sandwich year				Part time				Part time with Placement/ sandwich year						
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	Full time	2 years	September	July																				
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	Part time																							
	Part time with Placement/ sandwich year																							
Is this course generally suitable for students on a Tier 4 visa?	Please complete the International Office questionnaire Yes 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 / Subject to validation																							
	Course specification last updated and signed off		September 2019																					
Professional, Statutory & Regulatory Body accreditation	Institution of Chemical Engineers (IChemE) Potentially IoM ³																							

Reference points:	Internal	Corporate Strategy 2015-2020 Academic Quality and Enhancement Manual School Strategy LSBU Academic Regulations
	External	QAA Quality Code for Higher Education 2013 Framework for Higher Education Qualifications (QAA, 2008); Subject Benchmark Statements: Engineering 2015 The Accreditation of Higher Education Programmes (AHEP-3 2014) SEEC Level Descriptors 2016 Competitions and Markets Authority

B. Course Aims and Features

Distinctive features of course	The Higher National Diploma is a two year course giving a good all-round training in Chemical Engineering, combining theory with practical and project work. Whilst it will enable you to find work in a variety of positions in the chemical and process industries, many use this qualification as a stepping-stone to a degree course in chemical engineering. With good marks you may continue with study for the degree, BEng (Hons) Chemical Engineering or BEng (Hons) Chemical and Energy Engineering, which requires two years more study.
Course Aims	The HND Chemical Engineering course aims to: <ul style="list-style-type: none"> 1. Produce graduates trained in the core discipline of Chemical Engineering 2. Produce graduates capable of contributing to the profession of Chemical Engineering in the context of modern industrial practice and sustainable development. 3. To enable students to develop an understanding of relevant disciplines associated with Chemical Engineering in order to operate in multidisciplinary teams. 4. Develop students' knowledge of mathematics, applied sciences, engineering methods and safety, in support of the central themes of the course 5. Develop students' intellectual and reasoning powers, their ability to perceive the broader perspective, and their problem-solving skills through the integration of a broad range of subject material 6. Develop the transferable skills expected of an honours graduate who will work in multi-disciplinary teams with technical, commercial and management staff in industrial and other occupations.
Course Learning Outcomes	A Students will acquire knowledge and understanding of: A1 Mathematics, science and engineering underlying the practice of chemical engineering. A2 The interactions involved in chemical engineering systems and analytical and computational tools to deal with these. Mathematical and computer models in the design and analysis of chemical equipment and processes, and an appreciation of their benefits and limitations. A3 The scope of chemical engineering from design to simulation of unit operations and processes. The professional and ethical responsibilities in the global and social context of engineering. A thorough understanding of current practice in chemical engineering and its limitations and some appreciation of likely new developments.

Current technological and commercial challenges and development of the chemical industry.

B Students will develop their intellectual skills such that they are able to:

- B1 Use mathematics, science and engineering to support theoretical and practical analysis of chemical processes.
- B2 Employ concepts from the applied and engineering sciences to design and evaluate chemical processes. Use scientific principles in the modelling and analysis of chemical engineering processes.
- B3 Show awareness of the significance of safety in design work. Critically analyse commercial risks through understanding the basis of such risks.
- B4 Use fundamental knowledge to investigate new and emerging technologies.
- B5 Extract data pertinent to an unfamiliar problem, and apply in its solution using computer based tools when appropriate.
- B6 Integrate engineering principles of a multi-disciplinary nature in order to propose solution to problems.
- B7 Apply management and business practices appropriately.
- B8 Produce engineering solutions which are consistent with ethical and social responsibilities.

C Students will acquire and develop practical skills in chemical engineering such that they are able to:

- C1 Use computers and current software in quantitative and analytical work, as well as general information technology for communication and data handling. Use software commercially available in the simulation of chemical processes.
- C2 Plan and manage work both individually and in teams. Communicate effectively using appropriate media.
- C3 Evaluate designs and systems to identify areas of potential hazard and environmental threat and propose improvements.
- C4 Use laboratory, engineering and measuring equipment to provide data in support of theoretical understanding.
- C5 Analyse and solve engineering problems, often on the basis of limited and imperfect data. Critically apply scientific evidence based methods in the solution of problems.
- C6 Apply principles of project management.

D Students will acquire and develop transferable skills such that they are able to:

- D1 Demonstrate literacy and numeracy skills. Manipulate, sort and present data in forms useful for understanding. Select, interpret and validate data, identifying possible errors and inconsistencies.
- D2 Communicate clearly the findings of experiments, projects and other assignments using written reports, oral and visual presentations.
- D3 Work effectively in a team, recognising the roles played by different team members.
- D4 Manage own responsibilities, including time and task management.
- D5 Undertake self-development and the capacity to learn.
- D6 Identify and solve problems in familiar and unfamiliar situations.
- D7 Adapt to change in the working environment.

C. Teaching and Learning Strategy

- A.** Lectures, tutorials and laboratory practical, especially at level 4, cover A1. The behaviour of systems, A2, is introduced in classes at all levels, and is a feature of project work. Project work also shows the scope of the discipline, A3.
Students are encouraged to attend the seminars/event such as those organised by IChemE. Also, invited speakers will deliver presentations at LSBU on relevant and current topics in chemical engineering.
- B.** Most of the curriculum will support B1-B8; they are developed through lectures, individual and group problem-based work. In private study, students will develop skills by writing laboratory reports, and tackling problems set by the tutor or in past examinations, case studies, and projects.
(B5) is developed in computer laboratory sessions embedded in modules and projects.
- C.** C1: Computing skills for engineering and science are developed in practical workshops at level 4. Students also learn the principles and study the application of specialist engineering packages.
C2 and C3 will be major part of small projects embedded in some modules and in the two project modules and students will receive guidance on application of principles studied earlier.
C4 will be acquired in practical workshop and laboratory sessions.
- D.** D1 is developed in laboratory practical work and design tasks; students for example obtain data from handbooks and computer databases, and use it in calculations, graphical solutions and computer applications.
D2 and D3: report-writing and team-working skills are developed in laboratory and project-oriented modules throughout the course. D4-D7 developed along the course.

D. Assessment

- A.** Summative assessment: Content, knowledge and understanding is assessed through coursework, or coursework and examination. Coursework can take many forms (based on the practical or theoretical content of the module) including essays, reports, group work, oral presentations, production of posters, and in-class tests. Examinations normally take the form of a 2 or 3-hour unseen end-of-semester paper.
Formative assessment includes: tutorials exercises, simulation exercises, discussions in classroom, questions and answer sessions, peer discussions, observations, reflection on learning, presentation rehearsals.
- B.** Intellectual skills are normally assessed through formal examinations, student presentations and individual viva voce examination. Preparation of laboratory and project reports will also contribute.
- C.** C1 will be assessed through computing assignments, C2-C6 as parts of the major project assessment, and C4 in the marking of laboratory reports. C5-C6: projects will be marked for a critical approach to problem-solving.
- D.** A variety of assessment methods are used to assess transferable skills. These include computer laboratory exercises and simulations, oral presentations, written reports, and final project.
For instance: D1 is assessed in many of the written examination papers, also laboratory and project reports. Laboratory teachers give students considerable feedback on the quality of written laboratory reports, D2; students discuss this feedback with their personal tutors. The effectiveness of teamwork, D3, is assessed as an element in the major project.

E. Academic Regulations

1. Assessment regulations

Assessment regulations laid down in the current edition of the university's Academic Regulations for Taught Programmes apply to the course, subject to any exceptions noted in the text below and any instances where local protocols supersede University guidelines for accreditation purposes. The following are the main provisions of the Academic Regulations.

Individual modules of the HND course may be awarded Pass (40% or better), Merit (55% or better) or Distinction (70% or better). To complete the HND, a student must pass all the designated modules in the course.

A student who completes the HND may be considered for admission to the either BEng Chemical Engineering or the BEng Chemical and Energy Engineering with advanced standing.

2. Support for students

The University places a high priority on providing support for students. This support is provided by a combination of services, both centrally in the University and locally at the programme level. Much of the support focuses on developing students' skills to enhance their performance on the programme and to facilitate their transition to employment.

2.1 Programme and course level support:

All students are allocated a personal tutor on initial enrolment to the course. The personal tutor is the point of contact for all matters relating to the student's welfare and progress whilst at London South Bank. All tutees will meet their tutor at the start of the course.

The primary teaching contact with students, in classrooms, laboratories and workshop, is supported by print and by electronic material. For their general understanding of the course, students receive a Course Guide and a summary of the syllabus; these are updated annually. For each module, the module leader provides a Module Guide. Subject tutors provide further material as appropriate, including course notes, supporting information and reprints, problem sets, assignment briefs and experiment instructions. Students have access to books in the Perry Library, and may obtain copies of past exam papers. All guides and support are found on LSBU's Virtual Learning Environment (VLE).

Students on the course benefit from a number of contacts with industry and other outside bodies. A programme of industrial visits will be organised with the aim of introducing students to chemical industries in the UK.

All students are encouraged to take the industrial placement option. Students who complete placements have reported that the experience is invaluable in future employment. Students will find more information on placements via LSBU's Careers Hub

A sandwich placements co-ordinator in Division for Chemical and Energy Engineering will (normally) organise placement information events in-class.

The major projects taken by final year degree students have strong industrial orientation. External speakers from industry are invited to visit during the year to give students an appreciation of industrial technology and practice and, for example, the importance of HAZOP in process industry.

2.2 Student Life Support

The University's Student Life provides a wide range of personal and academic services to students and works with other departments and faculties in the University to ensure that the services offered meet the needs of students. All services, such as accommodation, enrolment practical information are based on 103 Borough Road, the main campus in Southwark. Some services are provided in the evening. Information about all services is included on the website:

<https://www.lsbu.ac.uk/student-life>

The services on offer include:

Skills for Learning Centre – offers students a range of interactive workshops, one-to-one tutorials and drop-in sessions delivered by experienced learning developers.

The Academic Practice and English Language team provide guidance to maximise your reading, writing and thinking and the Maths and Stats Team deliver tailored support to refresh and improve your numerical, mathematical or statistical knowledge.

<https://www.lsbu.ac.uk/student-life/student-services/learning-resources>

The Employability Team – helps students to access job opportunities and experience the world of work. The team support students an opportunities to undertake a work placement, internship or other professional experience or study abroad during their degree. The Employability Team deliver free employability workshops for students all year round on a variety of employment related topics.

<https://www.lsbu.ac.uk/student-life/student-services/student-employability>

Job Shop- is located in the LSBU Student Life Centre and covers a variety of career guidance: Tailoring CVs, cover letters and job applications, one-to-one mock interviews, temporary jobs, placement and internship opportunities and graduate roles. Also supports in sourcing relevant employability related online resources and services.

Personal development and advice – advisory service to discuss personal concerns or difficulties during their programme which might affect their personal development and academic performance, support for students with disabilities including dedicated dyslexia support, chaplaincy to provide confidential pastoral care.

Disability & Dyslexia Support (DDS) <https://www.lsbu.ac.uk/student-life/student-services/disability-dyslexia-support>

Health and Wellbeing Support <https://www.lsbu.ac.uk/student-life/student-services/health-wellbeing>

3. Quality indicators

The HND course has been accredited by the Institution of Chemical Engineers (IChemE) as meeting the educational requirements.

A course board, made up of staff and student representatives from each year of the course, meets at least once per term to discuss issues to do with learning and teaching and course developments. The course board is convened and chaired by the course director.

The course is reviewed at an annual meeting of teaching staff. The review takes into account the progression statistics for the individual modules, students' end of module questionnaires and external examiners' comments. On the basis of these, modifications to modules and the course are proposed and where necessary, submitted to the School Academic Standards Committee for approval.

The course is monitored through the annual monitoring report for Chemical and Energy Engineering.

F. Entry Requirements

In order to be considered for entry to the programme applicants will be required to have:

- A Level DDD **or**;
- BTEC National Diploma MMP **or**;
- Access to HE qualifications with 24 Merits and 21 Passes **or**;
- Equivalent level 3 qualifications worth 80 UCAS points
- Level 3 qualifications must include Maths or Science (chemistry preferred)
- Applicants must hold 5 GCSEs A-C including Maths and English or equivalent (reformed GCSEs grade 4 or above).

Equivalent international qualifications can be accepted. English language qualifications for international students: IELTS score of 6.0 or Cambridge Proficiency or Advanced Grade C.

G. Course structure(s)

Course overview

- HND degree programme consists of modules with a total credit value of 240 credits; a maximum of 60 credits may be at Level S and a minimal of 60 credits at Level 5. The 240 points are made up of 12 standard modules of 20 points each.

HND Chemical Engineering – Full time

	Semester 1		Semester 2		
Level S	Study and Laboratory Skills	20	Chemistry and Applications	20	
	Applied Mathematics 1	20			
Level 4	Engineering Mathematics and Modelling	10	Engineering Mathematics and Modelling	10	
	Design & Practice	10	Design & Practice	10	
	Introduction to Chemical and Petroleum Engineering (until 2019)	20	Engineering Computing (until 2019)	20	
	Introduction to Chemical Engineering (from 2020)	20	Computing for Chemical Engineering (From 2020)	20	
	Engineering Principles	20	Engineering Principles 2	20	

Level 5	Fluids and Separation (until 2019)	20		
	Separation Processes (from 2020)	20		
	Thermodynamics and Heat Transfer (until 2019)	10	Thermodynamics and Heat Transfer (until 2019)	10
	Thermodynamics (from 2020)	10	Thermodynamics (from 2020)	10
	Industrial Chemical Processes (until 2019)	10	Industrial Chemical Processes (until 2019)	10
	Chemical Engineering Processes 1 (from 2020)	20		

H. Course Modules and Assessment

Module Code	Module Title	Level	Semester	Credit value	Assessment
EAB_S_972	Study and Laboratory Skills	S	1	20	CW
EAB_S_971	Applied Mathematics 1	S	1	20	CW & Exam
EAB_S_973	Chemistry and Applications	S	2	20	CW
ENG_4_401	Engineering Mathematics and Modelling	4	1 & 2	20	CW & Exam
ENG_4_402	Engineering Principles	4	1	20	CW & Exam
ENG_4_403	Design & Practice	4	1 & 2	20	CW
ENG_4_405	Engineering Computing (until 2019)	4	2	20	CW & Exam
CEE_4_XXX	Computing for Chemical Engineering (from 2020)	4	2	20	CW & Exam
ENG_4_470	Introduction to Chemical and Petroleum Engineering (until 2019)	4	1	20	CW & Exam
CEE_5_XXX	Introduction to Chemical Engineering (from 2020)	4	1	20	CW & Exam
ENG_4_471	Engineering Principles 2	4	2	20	CW & Exam
ENG_5_492	Industrial Chemical Processes (until 2019)	5	1 & 2	20	CW
CEE_5_XXX	Chemical Engineering Processes 1	5	1	20	CW & Exam
ENG_5_472	Fluids and Separation (until 2019)	5	1	20	CW & Exam
CEE_5_XXX	Separation Processes	5	1	20	CW & Exam
CPE_5_THT	Thermodynamics and Heat Transfer (until 2019)	5	1 & 2	20	CW & Exam
CEE_5_XXX	Thermodynamics	5	1 & 2	20	CW & Exam

I. Timetable information

Students will be able to access a full timetable for the course from the start of semester and will be notified of any changes. Maximum effort is made to leave at least one afternoon/day free from timetable.

J. Costs and financial support

Course related costs

- Although all core books can be found in the library or online as free e-books, the student may wish to buy core reading material for each module. There are also costs associated with printing during the course, which are not covered.

Tuition fees/financial support/accommodation and living costs

- 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

Appendix B: Educational Framework (undergraduate courses)

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Appendix A: Curriculum Map

This map provides a design aid to help course teams identify where course outcomes are being developed, taught and assessed within the course. It also provides a checklist for quality assurance purposes and may be used in validation, accreditation and external examining processes. Making the learning outcomes explicit will also help students to monitor their own learning and development as the course progresses.

Modules			Course outcomes																	
Level	Title	Code	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
S	Study and Laboratory Skills	EAB_S_972	TA						TA								TA			
S	Applied Mathematics 1	EAB_S_971	TDA						TDA								TDA			
S	Chemistry and Applications	EAB_S_973	TDA						TDA								TDA			
4	Engineering Mathematics and Modelling	ENG_4_401	TDA						TDA								TDA			
4	Engineering Principles	ENG_4_402	TA						TA						TDA	TA	TDA	TDA	TD	
4	Design & Practice	ENG_4_403		TAD		TD				TDA	TDA	TDA		TDA		TDA	TDA	TDA	TDA	
4	Engineering Computing (until 2019)	ENG_4_405	TDA						TDA				TDA				TDA	TDA		
4	Computing for Chemical Engineering (from 2020)	CEE_4_XXX	TDA						TDA				TDA				TDA	TDA		
4	Introduction to Chemical and Petroleum Engineering (until 2019)	ENG_4_470	TA		TA				TA	T			TA				TA	TA	TA	
4	Introduction to Chemical Engineering (from 2020)	CEE_4_XXX	TA		TA				TA	T			TA				TA	TA	TA	
4	Engineering Principles 2	ENG_4_471	TA						TA						TDA	TA	TDA	TDA	TDA	
5	Industrial Chemical Processes (until 2019)	ENG_5_492	TA						TDA						TA	TA			TDA	
5	Chemical Engineering Processes 1 (from 2020)	CEE_5_XXX	TA						TA	TA							TDA	DA		
5	Fluids and Separation (until 2019)	ENG_5_472	TA	TDA					TA	TA			TA		TA			TA	TDA	
5	Separation Process (from 2020)	CEE_5_XXX	TA	TDA					TA	TA			TA		TA	TA		TA	TDA	
5	Thermodynamics and Heat Transfer (until 2019)	CPE_5_THT	TA	T					TA	TA					TA			TA	TD	
5	Thermodynamics (from 2020)	CEE_5_XXX	TA	T					TA	TA					TA			TA	TD	

Appendix B: Embedding the Educational Framework for Undergraduate Courses

The Educational Framework at London South Bank University is a set of principles for curriculum design and the wider student experience that articulate our commitment to the highest standards of academic knowledge and understanding applied to the challenges of the wider world.

The Educational Framework reflects our status as University of the Year for Graduate Employment awarded by *The Times and The Sunday Times Good University Guide 2018* and builds on our 125 year history as a civic university committed to fostering social mobility through employability and enterprise, enabling our students to translate academic achievement into career success.

There are four key characteristics of LSBU's distinctive approach to the undergraduate curriculum and student experience:

- Develop students' professional and vocational skills through application in industry-standard facilities
- Develop our students' graduate attributes, self-awareness and behaviours aligned to our EPIIC values
- Integrate opportunities for students to develop their confidence, skills and networks into the curriculum
- Foster close relationships with employers, industry, and Professional, Statutory and Regulatory Bodies that underpin our provision (including the opportunity for placements, internships and professional opportunities)

The dimensions of the Educational Framework for curriculum design are:

- **informed by employer and industry** needs as well as professional, statutory and regulatory body requirements
- **embedded learning development** for all students to scaffold their learning through the curriculum taking into account the specific writing and thinking requirements of the discipline/profession
- **high impact pedagogies** that enable the development of student professional and vocational learning through application in industry-standard or authentic workplace contexts
- **inclusive teaching, learning and assessment** that enables all students to access and engage the course
- **assessment for learning** that provides timely and formative feedback

All courses should be designed to support these five dimensions of the Educational Framework. Successful embedding of the Educational Framework requires a systematic approach to course design and delivery that conceptualises the student experience of the curriculum as a whole rather than at modular level and promotes the progressive development of understanding over the entire course. It also builds on a well-established evidence base across the sector for the pedagogic and assessment experiences that contribute to high quality learning.

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	<p><u>Outcomes focus and professional/employer links</u> 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. Students should have access to employers and/or alumni in at least one module at level 4.</p>	Design & Practice, links with IChemE, Employability Days
Embedded learning development	<p><u>Support for transition and academic preparedness</u> At least two modules at level 4 should include 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. Other level 4 modules should reference and reinforce the learning development to aid in the transfer of learning.</p>	Design & Practice, Introduction to Chemical Engineering
High impact pedagogies	<p><u>Group-based learning experiences</u> 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. At least one module at level 4 should</p>	Design & Practice

	include an opportunity for group working. Group-based learning can also be linked to assessment at level 4 if appropriate. Consideration should be given to how students are allocated to groups to foster experience of diverse perspectives and values.	
Inclusive teaching, learning and assessment	<u>Accessible materials, resources and activities</u> 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 availability of alternative formats for reading lists.	All course related material is provided through Moodle and the Perry Library
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 essential during transition into university. All first semester modules at level 4 should include a formative or low-stakes summative assessment (e.g. low weighted in final outcome for the module) to provide an early opportunity for students to check progress and receive prompt and useable feedback that can feed-forward into future learning and assessment. Assessment and feedback communicates high expectations and develops a commitment to excellence .	All level 4 Modules
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. In preparation for an undergraduate dissertation at level 6, courses should	Design & Practice, Introduction to Chemical Engineering,

	<p>provide opportunities for students to develop research skills at level 4 and 5 and should engage with open-ended problems with appropriate support. 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.</p>	
<p>Curricula informed by employer and industry need / Assessment for learning</p>	<p><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.</p>	<p>Design & Practice, links with IChemE</p>
<p>Inclusive teaching, learning and assessment</p>	<p><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 themselves and their experiences in the curriculum as well as foster understanding of other viewpoints and identities.</p>	<p>Diversity and inclusivity is acknowledged throughout all modules</p>
<p>Placement Year</p>		

<p>Embedded learning development</p>	<p><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.</p>	<p>Design & Practice, Introduction to Chemical Engineering, Engineering Principles, Separation Processes, Thermodynamics, Chemical Engineering Process 1</p>
<p>High impact pedagogies</p>	<p><u>Multi-disciplinary, interdisciplinary or interprofessional group-based learning experiences</u> Building on experience of group working at level 4, at level 5 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 outcomes including inclusivity, communication and networking.</p>	<p>Design & Practice</p>
<p>Assessment for learning</p>	<p><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</p>	<p>Variation in assessment is provided throughout all modules</p>

	<p>for all students and does not give those with a particular prior qualification (e.g. A-level or BTEC) an advantage or disadvantage. An 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.</p>	
<p>Curricula informed by employer and industry need</p>	<p><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.</p>	<p>Links with the IChemE, Employability Days</p>

Appendix C: Terminology

[Please provide a selection of definitions according to your own course and context to help prospective students who may not be familiar with terms used in higher education. Some examples are listed below]

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 learning
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

