



Course Specification

A. Course Information				
Final award title(s)	MSc Petroleum Engineering			
Intermediate exit award title(s)	PG Dip Petroleum Engineering PG Cert Petroleum Engineering Studies			
UCAS Code	N/A	Course Code(s)	3613: Full Time Mode 3614 Part Time Mode	
	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 and Energy Engineering			
Course Director				
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 checked="" type="checkbox"/> Part time <input type="checkbox"/> other please specify			
Length of course/start and finish dates	Mode	Length years	Start - month	Finish - month
	Full time	1 year	September	September
	Full time with placement/ sandwich year			
	Part time	2 years	September	September
	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	June 2008		
	Course specification last updated and signed off	September 2019		
Professional, Statutory & Regulatory Body accreditation	Energy Institute			

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 Subject Benchmark Statements (2016) PSRB Competitions and Markets Authority SEEC Level Descriptors 2016
B. Course Aims and Features		
Distinctive features of course	<ul style="list-style-type: none"> • It offers our BEng Petroleum Engineering graduates further studies to gain a master level in petroleum engineering • It offers graduates from physical sciences and other engineering areas the opportunity of conversion to a Petroleum Engineering career, increasing their employability. • It can be taken in a part time or full-time mode. • It comprises a research project that can be done in collaboration with the oil and gas industry. • Alternative exit options after completing 4 and 6 modules, as PgCert and PgDip, respectively. 	
Course Aims	<p>The MSc Petroleum Engineering course aims to:</p> <ol style="list-style-type: none"> 1. Enhance the quality and accessibility of postgraduate education in petroleum engineering. 2. Progress MSc graduates who are equipped with the relevant understanding, skills and knowledge required to operate effectively in the oil and gas sector. 3. Improve the employability of graduate engineers in the oil and gas sector. 4. Enable students to develop an understanding of relevant disciplines associated with petroleum engineering to operate in multidisciplinary teams. 5. Encourage the development of personal qualities and professional competences of petroleum engineers. 	
Course Learning Outcomes	<ol style="list-style-type: none"> a) Students will have knowledge and understanding of: <ul style="list-style-type: none"> A1- fundamental concepts, principles and theories of disciplines relevant to petroleum engineering. A2- current technological and commercial challenges and development of the petroleum industry. A3- mathematical and computer models in the design and analysis of production projects, and an appreciation of their benefits and limitations. A4- design processes and methodologies related to petroleum engineering. A5- the professional and ethical responsibilities in the global and social context of engineering. A6- management and business practices and their limitations, and how these may be applied appropriately b) Students will develop their intellectual skills such that they are able to: <ul style="list-style-type: none"> B1- apply fundamental concepts, principles and theories of disciplines relevant to petroleum engineering. 	

	<p>B2-use fundamental knowledge to investigate new and emerging technologies.</p> <p>B3- use scientific principles in the modelling and analysis of petroleum engineering systems and processes.</p> <p>B4- extract data pertinent to an unfamiliar problem, and apply in its solution using computer based tools when appropriate.</p> <p>B5- integrate engineering principles of a multi-disciplinary nature in order to propose solution to problems.</p> <p>B6- critically analyse commercial risks through understanding the basis of such risks.</p> <p>B7- apply management and business practices appropriately.</p> <p>B8- produce engineering solutions which are consistent with ethical and social responsibilities.</p> <p>c) Students will acquire and develop practical skills such that they are able to:</p> <p>C1- plan and manage work (both individually and in teams).</p> <p>C2- communicate effectively using appropriate media.</p> <p>C3- produce work (within quality frameworks) involving problem analysis, design exercise and evaluation.</p> <p>C4- critically apply scientific evidence based methods in the solution of problems.</p> <p>C5- use software commercially available in the simulation of oil and gas assets management.</p> <p>C6- apply principles of project management.</p> <p>d) Students will acquire and develop transferrable skills such that they are able to:</p> <p>D1- manage own responsibilities, including time and task management.</p> <p>D2- undertake self-development and the capacity to learn.</p> <p>D3- communicate effectively using a variety of media and presentation formats.</p> <p>D4- work with others both individually and as part of a team.</p> <p>D5- identify and solve problems in familiar and unfamiliar situations.</p> <p>D6- demonstrate literacy and numeracy skills.</p> <p>D7- adapt to change in the working environment.</p>
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C. Teaching and Learning Strategy

- (A1), (A2), and (A4) are normally pursued through lectures, and on-line materials using the virtual learning environment VLE.
- (A3) is normally addressed through lectures, computer laboratory sessions and on-line materials.
- (A1), (A3), (A4) and (A6) are normally addressed through a mixture of lectures and smaller group work. Graduates from BEng Petroleum Engineering could lead team work in some cases.
- (A4), (A5), (A6) are addressed through small group and individual problem-based work.
- (A2), (A4), (A5) and (A6); Students are encouraged to attend the conferences such as those organised by the Society of Petroleum Engineers, London section. Also, invited speakers will deliver presentations at LSBU on relevant and current topics in petroleum engineering.
- (B1)-(B8) are developed through lectures, individual and group problem-based work, including the final project.
- (B4) is developed in computer laboratory sessions.

- (C1)-(C6) Practical skills are developed through hands-on practical sessions in computer laboratories, oral presentations, small group work, and individual work.
- (D1)-(D7) transferable skills are developed through hands-on practical sessions in computer laboratories, oral presentations, small group work, and individual work.

D. Assessment

- Assessment methods are specified in each module Guide. **Content, knowledge and understanding** is assessed through coursework, or coursework and examination, oral presentations, production of posters and a viva.
- Coursework can take many forms (based on the practical or theoretical content of the module) including essays, reports, group work, and in-class tests. Examinations normally take the form of a 2 or 3 hour unseen end-of-semester papers.
- **Intellectual skills** are normally assessed through formal examinations, student presentations and individual viva voce examination.
- A variety of assessment methods are used to assess **practical and transferable skills**. These include computer laboratory exercises and simulations, oral presentations, written reports, final project.

E. Academic Regulations

The University's Academic Regulations apply for this course unless local regulations required for Learned Society accreditation supersede University Regulations. Any course specific protocols will be identified here.

F. Entry Requirements

Information on entry requirements should include:

- The standard requirement for admission is a 2.2 or higher first degree in engineering or a physical science from a UK university, or equivalent degree from overseas.
- Where entering with an engineering qualification, this must contain sufficient study of materials and their properties to adequately prepare the entrant.
- Specifically, a pure software engineering background would not give suitable cover of materials, however other branches of engineering are in general acceptable. Entrants from a science route must, by their degree or otherwise, be sufficiently prepared for the mathematical content of the course.
- Applicants must also meet the University's standard requirement for English, i.e. IELTS 6.5, TOEFL 580 or equivalent.
- Exemption through accreditation of prior learning (APL), including Experiential learning, will be offered exceptionally where the applicant can clearly show that they will be able to meet the learning outcomes of the course. Such AP(E)L will be in accordance with current academic regulations.

G. Course structure(s)

Course overview

- The MSc Petroleum engineering course is a postgraduate level oriented to fit the recruitment by the industry, both exploration and operating companies. The master's graduate in petroleum engineering needs understanding of the physical and chemical sciences, the modelling techniques applicable to reservoirs, and the aspects of economics, sustainability and health and safety that govern oil and gas operations.
- The MSc course prepare students as engineer, so that the MSc graduate has experience in critically analysing problems and defining solutions where the data is limited and "right" answers are not available. The delivered of the program in full and part time mode is described as follow:

3613 MSc Petroleum Engineering – **Full time**

	Semester 1		Semester 2	
Level 7	Reservoir Characterisation	20 credits	Petroleum Economics and Oilfield Management	20 credits
	Reservoir Engineering and Simulation	20 credits	Advanced Production Engineering	20 credits
	Drilling and Completion	20 credits	Field Development Plan	20 credits
			Dissertation (S1+S2+ Summer)	60 credits

3614 MSc Petroleum Engineering – **Part time**

	Semester 1		Semester 2	
Year 1	Reservoir Characterisation	20 credits	Petroleum Economics and Oilfield Management	20 credits
	Reservoir Engineering and Simulation	20 credits	Advanced Production Engineering	20 credits
Year 2	Drilling and Completion	20 credits	Field Development Plan	20 credits
			Dissertation (S1+S2+ Summer)	60 credits

Placements information

- The MSc Petroleum Engineering helps to equip and prepare students with the knowledge and skills for more in-depth study of reservoir and petroleum engineering, drilling and reservoir simulation and management.
- It also prepares the student to work methodically in design or operations teams, with minimal supervision, with the ability to progressively assume additional responsibility in the petroleum industry.

H. Course Modules

Module Code	Module Title	Level	Semester	Credit value	Assessment
CPE_7_RCH	Reservoir Characterisation	7	1	20	Exam CW
EAB_7_153	Reservoir Engineering and Simulation	7	1	20	Exam CW
CPE_7_DAC	Drilling and Completion	7	1	20	Exam CW
EAB_7_156	Petroleum Economics and Oilfield Management	7	2	20	CW 100% written report
CPE_7_AEN	Advanced Production Engineering	7	2	20	Exam CW
CPE_7_FDP	Field Development Plan	7	2	20	CW
CPE_7_DIS	Dissertation	1	2	60	CW: 100%

I. Timetable information

The timetable will be available online from induction week. Modules are delivered during the working week. Student will be informed about any change in advance through the virtual learning system Moodle. There will be a field trip in semester one.

J. Costs and financial support

Course related costs

- The tuition fee covers a field trip does not include any other course-related costs such as additional expenses, books or other learning materials, lab coats, etc. Students have free access to relevant books available for loan at the Perry Library.
<https://my.lsbu.ac.uk/my/applicant/Current-Applicants/Library>.

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: Personal Development Planning (postgraduate courses)

Appendix C: Terminology

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																										
Title	Code	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6	D7
Reservoir Characterisation	CPE_7_RCH	✓	✓	✓				✓	✓							✓	✓	✓	✓						✓	✓	✓	
Reservoir Engineering and Simulation	EAB_7_153	✓	✓	✓	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	
Petroleum Economics and Oilfield Management	EAB_7_156	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Drilling and Completion	CPE_7_DAC	✓	✓	✓	✓			✓	✓							✓	✓	✓	✓			✓	✓		✓	✓	✓	
Advanced Production Engineering	CPE_7_AEN		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Field Development Plan	EAB_7_157		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dissertation	EAB_7_158	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Appendix B: Personal Development Planning

Personal Development Planning (PDP) is a structured process by which an individual reflects upon their own learning, performance and/or achievement and identifies ways in which they might improve themselves academically and more broadly.

The module descriptors state in detail how achievement of module learning outcomes support PDP, as described under transferable skills and employability. The table below highlights the modules and outcomes with the strongest matches.

All modules contribute to PDP outcomes number 1 (self-management, especially of learning) and 6 (employability).

Approach to PDP	Level 7
1 Supporting the development and recognition of skills through the personal tutor system.	The personal tutor is the course director, students have regular access to staff through a program of drop in sessions during the program.
2 Supporting the development and recognition of skills in academic modules/modules.	All modules
3 Supporting the development and recognition of skills through purpose designed modules/modules.	EAB_7_156; EAB_7_157; EAB_7_158
4 Supporting the development and recognition of skills through research projects and dissertations work.	EAB_7_157; EAB_7_158
5 Supporting the development and recognition of career management skills.	EAB_7_158
6 Supporting the development and recognition of career management skills through work placements or work experience.	Students are encouraged to attend the conferences such as those organised by the Society of Petroleum Engineers; London Petrophysical Society and Energy Institute. Also, invited speakers will deliver presentations at LSBU on relevant and current topics in petroleum engineering. There is not work placement or work experience provided by the program, it is students' responsibility to find placement and work experience.
7 Supporting the development of skills by recognising that they can be developed through extra curricula activities.	Access to teaching staff and support, for example through the different parts of the Centre for Learning Support and Development, results in effective self-development for the master's level student.

8 Supporting the development of the skills and attitudes as a basis for continuing professional development.	All modules
9 Other approaches to personal development planning.	<p>The Service for students at LSBU http://www.lsbu.ac.uk/clsd/ is central to the University's mission to support the learning, personal and professional development of the university community.</p> <p>Students are encouraged to focus, prepare and plan for their future career as early as possible and throughout their time at university.</p> <p>The career and employability service team provides individual careers guidance, as well as a program of career management and employability workshops, including psychometric and personality testing and advice to students on how to market themselves effectively. This service also runs a job shop to help students find term-time and part-time employment, and offers advice on securing placements for those taking a sandwich year.</p>
10 The means by which self-reflection, evaluation and planned development is supported e.g. electronic or paper-based learning log or diary.	CPE_7_RCH ; CPE_7_DAC , EAB_7_157; EAB_7_158

Appendix C: 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 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