Course Specification

A. Course Information				
Final award title(s)	HND Electrical and Electronic Engineering			
Intermediate exit award title(s)	Certificate of Higher Education (CertHE) in Engineering (QCF Level 4)			
UCAS Code	006H		**Course Code(s)**	Part time 5606
	London South Bank University			
School	☐ ASC ☐ ACI ☐ BEA ☐ BUS ☒ ENG ☐ HSC ☐ LSS			
Division	Electrical and Electronic Engineering			
Course Director	Dr Saim Memon			
Delivery site(s) for course(s)	☒ Southwark ☐ Havering ☐ Other:			
Mode(s) of delivery	☐Full time ☒Part time			
Length of course/start and finish dates	**Mode**: Part time; Part time with Placement/ sandwich year **Length years**: 2.5; Not Offered **Start - month**: Sep **Finish - month**: January			
Is this course generally suitable for students on a Tier 4 visa?	**No**			
Approval dates:	Course(s) validated / Subject to validation	December 2019		
	Course specification last updated and signed off	September 2020		
Professional, Statutory & Regulatory Body accreditation	The HND (and HNC exit award) are awarded under licence from Pearson. This revised and restructured HND programme is mapped to the **Institution of Engineering and Technology** requirements and not only exceeds the requirements for an Engineering Technician but also **meets to a certain extent** the academic requirements for registration as an **Incorporated Engineer** in a view that diplomates develops engineering based employment experiences**.**			
Reference points:	Internal	Corporate Strategy 2015-2020		

		Academic Quality and Enhancement (AQE) Manual School Strategy LSBU Academic Regulations
	External	Competitions and Markets Authority (CMA) SEEC Level Descriptors 2016 QAA -Subject benchmark statement Engineering, 2015 Framework for Higher Education Qualifications (QAA, 2015) The Accreditation of Higher Education Programmers- UK Standards for Professional Engineering Competence (AHEP3 2014)
B. Course Aims and Features		
Distinctive features of course	HND in Electrical and Electronic Engineering is a specialist course, applied in nature, revamped for students who wish to pursue a career as a technical engineer and enhance their skills in the area of electrical and electronic engineering. In particular, the academic skills required to elevate diplomates professional engineering career with practical and theoretical understanding of the electronics, programming, electrical machines, electrical services for buildings and applied control engineering skills with the support of mathematics and computer systems modules. This HND course features technical electrical and electronic engineering contents to equip diplomates with the latest demands of electrical and electronic industry and engineering businesses. The distinctive features of this course are that the technical based electrical and electronic engineering modules supported by the industrial research informed contents such as electrical machines, electronics, electrical services and lighting for buildings tailored with essential mathematical, applied control and computer systems skills. This helps diplomates' academic and technical skills necessary to enhance their career as an entrepreneur, engineer and/or technician at industries, companies and a range of electrical building service sector.	
Course Aims	This HND in Electrical and Electronic Engineering is a technical course that delivers QCF level 4 and level 5 modules as per National Qualifications Framework. This HND is aimed to fully meet the academic requirements to register as an Engineering Technician (EngTec) and it also partially meets the academic requirements for professional accreditation as Incorporated Engineer (IEng).. The 2.5 year long part-time HND programme intended as an accessible route allowing working technicians, engineers, consultants and/or entrepreneurs to progress their career with essential technical and academic skills that this new structure offers. The opportunity to progress with advanced standing to undergraduate degree level study leading to eventual employment in the sector at Incorporated Engineering level. However, such professional registration may require further learning to meet the full educational and work-based experience requirements for Incorporated Engineers, this can be obtained for example by the progression to an accredited BEng (Hons) top-up programme. The general aims of this course are to develop the students' technical and application skills beyond the requirements for an Engineering Technician	

	and advance to partially meet the requirements of an Incorporated Engineer; the emphasis being on developing skills appropriate to an integrated and interdisciplinary electrical, electronic, control and computer engineering skills. Students will be expected to develop good organisational and project competence, sound technical judgement and critical self-awareness in applying appropriate methods and design solutions. Students from this HND in EEE programme will enhance analytical and communication skills, and would be to participate in a range of practical and academic assignments as a team but also to be able to work independently. The HND programme specifically aims to: 1. Develop diplomates' technical skills in pursuit of the progression to be Electrical and Electronic Technical Engineers at QCF level 5 who will, after appropriate further learning, eventually expect to register as Incorporated Engineers subject to meeting the requirements of the professional body such as ECUK and The IET. 2. Produce diplomates trained in the core discipline of Electrical and Electronic Engineering with an emphasis on key knowledge and practical necessary. 3. Provide an intermediate level qualification route for students wishing to transfer to the BEng(Hons) in Electrical and Electronic Engineering or Electrical Power Engineering courses at London South Bank University. 4. Develop students' knowledge of mathematics, electrical, electronic, applied control, computer systems with programming and professional engineering practices supported by essential mathematical and analytical problem solving skills. 5. Develop students' practical and problem solving skills through the integration of a broad range of subject material. Encourage students to develop an independent and reflective approach to study and enable them to become more self-directed learners. 6. Teach students to communicate clearly, to argue rationally and to draw conclusions based on rigorous approaches to a range of engineering problems. 7. Develop the transferable skills expected of a Higher National diplomate engineer. For example, diplomates will be expected to work in multi-disciplinary teams with technical, commercial and management staff in industrial and other occupations. 8. Develop professional working ethics and understanding of the academic environment with motivation and attitude to the practice of engineering at IEng (Incorporated) level and generally be able to practice in electrical/electronic engineering and address such issues as health and safety, time management and attentiveness in performing workshop experiments in consistent to the class lecture notes.
Course Learning Outcomes	The HND in EEE is a part-time course re-structured to meet the learning outcomes as specified by the AHEP3 and UK-SPEC in compliance with the certain requirements of accreditation bodies for Incorporated Engineer, IEng status, and Engineering Technician, IEng status, with

further demonstration of professional competences and commitments as part of their engineering industrial/company based employment.

The conversion of AHEP3 and UK-SPEC competences to LSBU HND in EEE programme outcomes are summarised in the table below.

Conversion of AHEP3 and UK-SPEC Competences to LSBU program outcomes	
AHEP3 and UK-SPEC IEng with some elements of partial CEng due to the sharing of some common modules of undergraduate courses.	LSBU Programme Outcome
SM1i	A1
SM2i	A2
SM3p	A3
EA1i	B1
EA2i	B2
EA3i	B3
EA4i	B4
EP1i	C1
EP2i	C2
EP3i	C3
EP4i	C4
EP5i	C5
EP6i	C6
EP7i	C7
EP8p	C8
D2i + D3i	D1
D4i	D2
D5i	D3
D6i+ ET3i	D4

List of Abbreviations

SM	*Science and Mathematics*
EA	*Engineering Analysis*
D	*Design*
ET	*Economic, Legal, Social, Ethical and Environmental Context*
EP	*Engineering Practice*
Postfix 'i'	*Indicates, the learning outcome is for partial or full IEng accreditation*
Postfix 'p'	*Indicates, the learning outcome is for partial CEng accreditation*
A	*Knowledge and Understanding*
B	*Intellectual Skills*
C	*Practical Skills*
D	*Transferable Skills*

A. Knowledge and Understanding

HND in EEE programme is developed to use a combination of general and technical based electrical and electronic engineering knowledge and understanding to apply existing and emerging technologies. More specifically, diplomates will need the following knowledge and understanding abilities:

	A1: Knowledge and understanding of scientific principles and methodology necessary to underpin their education in EEE discipline, to enable appreciation of its scientific and engineering context, and to support their understanding of historical, current, and future developments and technologies. **A2**: Knowledge and understanding of mathematical principles necessary to underpin their technical education in EEE and to enable them to apply mathematical methods, tools and notations proficiently in the analysis and solution of engineering problems at QCF level 5. **A3:** Ability to apply knowledge to support study of their own engineering discipline. **Teaching and learning strategies:** Acquisition of **A1** and **A2** are gained through lectures and tutorials of specific modules, e.g. mathematics, electrical circuit analysis, C++ programming, analogue electronics, electrical services and lighting for buildings, transformers and motors and electronic principles. Acquisition of **A3** is normally through professional engineering practice, computer systems and networks and applied control engineering and the HND project module. There is a balance of knowledge and understanding acquisitions at QCF level 4 and level 5. **Assessment** **A1**: Assessment of the relevant scientific principles is through examinations, mini tests/phase tests and assignments. Such formative and summative assessments assure that the students are developing their knowledge and understanding and following the academic procedures such as use of lecture notes, tutorials, and students' engagement to the modules and developing self-learning approach. **A2**: is assessed by assignments as well as written examinations. **A3**: is assessed by assignments and presentations. **B. Intellectual Skills** Electrical and Electronic Engineering analysis involves the application of engineering concepts and tools to the solution of engineering problems. Diplomates will need: **B1**: Ability to monitor, interpret and apply the results of analysis and modelling in order to bring about continuous improvement. **B2**: Ability to apply quantitative methods in order to understand the performance of systems and components. **B3**: Ability to use the results of engineering analysis to solve engineering problems and to recommend appropriate action. **B4**: Ability to apply an integrated or systems approach to engineering problems through know how of the relevant technologies and their application.

Teaching and learning strategies:
Acquisition of **B1** is partially developed through tutorials and workshops of most modules. **B2** is gained through lectures, small group seminars and tutorials of all modules. These covered in the majority of modules such as mathematics, electrical circuit analysis, digital logic design, electronic principles, analogue electronics, electrical services and lighting for buildings, transformers and motors and applied control engineering. Acquisition of **B3** is through the module on object-oriented programming C++ and computer systems and networks modules and partially in other modules. **B4** is covered in the HND project, applied control engineering, analogue electronics, electrical circuit analysis and electrical services and lighting for buildings modules.

Assessment
B1: is accessed through formative assessments such as assignments, presentations and online quizzes and summative coursework assessments such as mini tests/phase tests.
B2: is assessed by assignments as well as written end-of-module examinations.
B3: is assessed by lab reports and final project reports.
B4: is assessed by a combination of phase tests and formal reports.

C. Practical Skills
This involves the practical application of engineering skills, combining theory and experience, and the use of other relevant knowledge and skills. Diplomates must be able to demonstrate:

C1: Knowledge of contexts in which engineering knowledge can be applied (e.g. operations and management, application and development of technology).
C2: Understanding of and ability to use relevant materials, equipment, tools, processes, or products.
C3: Knowledge and understanding of workshop and laboratory practice.
C4: Ability to use and apply information from technical literature.
C5: Ability to use appropriate codes of practice and industry standards.
C6: Awareness of quality issues and their application to continuous improvement.
C7: Awareness of team roles and the ability to work as a member of an engineering team.
C8: Understanding of the need for a high level of professional and ethical conduct in engineering and a knowledge of professional codes of conduct.

Teaching and learning strategies:
The **C1** outcome is delivered at QCF level 4 modules by the effective research informed teachings of professional engineering practice, applied technical mathematics, electrical circuit analysis and essential object-oriented programming in C++ modules along with taught-supported practical workshop sessions and tutorials. This continues throughout the course where characteristics of electrical engineering with mathematical and programming skills applied at QCF level 5 modules.

	The achievement of **C2**, **C3**, **C4** and **C5** acquired through a large number of modules where laboratory activity recorded in logbooks. At QCF level 4 in Professional Engineering Practice module a specialist approach of entrepreneurial skills and PCB electronic circuit programming skills are planned to equip students with mandatory skills in leading them to the QCF level 5. At QCF level 5, the applied approach in consistent to their development of level 4 foundation are planned to be carried out with more technically specific class lectures, laboratory, design and computer-based workshops, practical investigations, design exercises and applied control engineering, analogue electronics and electrical services and lighting for buildings skills supported with separate a yearlong HND project. The specific Electrical and Electronic Engineering relevant codes and standards are part of the specialists' modules at QCF level 5. However, at QCF level 4 in the electrical circuit analysis students begin to appreciate the importance of electrical regulations and protection system supported by lectures and workshop experiments and quality issues of **C6** and **C7**. Working with uncertainty, outcome **C8** is carried throughout the HND starting from year 1 of the module electrical circuit analysis to electrical services and lighting for buildings module and students will be able to demonstrate it throughout modules and more specifically in HND final year project where students are expected to discuss their outcomes in terms of error predictions, measurements and the optimization of technical uncertainties with their project. **Assessment** **C1**: is assessed by laboratory exercises and tutorial assignments. **C2**: are assessed specifically via standard logbooks and reports based on laboratory activity. **C3:** is assessed by design assignments and some exercises and tests in the early modules, and later by forming part of the checklist of elements for which marks are awarded in the assessment of small and larger projects. **C4**: is assessed by project work where students are required to provide background information as well as suitable referencing for their assignment. **C5** and **C6**: are formally assessed in year 1 in simple 'design and make' exercises. Further development of these skills is indirectly assessed through workshop based practical design assignments in specialist modules at QCF level 5. **C7**: is specifically assessed through examination in a number of QCF level 5 modules such as group works in the workshops and ability to work as a team in the study of the specialist modules that require group study. **C8**: is assessed throughout in class lectures, tutorials and workshop sessions where students' professional ethical conduct in engineering tasks will be judged and assessed, specifically, in the assignments, logbooks and HND individual project work.

D. Transferable Skills

Design is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges and can be used to integrate all engineering understanding, knowledge and skills to the solution of real problems. Diplomates will need the knowledge, understanding and skills to:

D1: Investigate and define a problem and identify constraints including energy efficiency in power consumption and consideration of the environment and sustainability issues, health and safety and risk assessment issues;

D2: 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.

D3: Work with information that may be incomplete or uncertain and be aware that this may affect the design and develop an ability to communicate clearly.

D4: Apply problem-solving skills, technical knowledge and understanding to create or adapt design solutions that are fit for purpose including operation, maintenance, reliability.

Teaching and learning strategies:

D1: Essential principles of energy-efficiency of the electrical machines, devices and equipment and their power analysis with the consideration of sustainable practices are covered in the specialised modules such as electrical circuit analysis at QCF level 4 and transformers and motors and electrical services and lighting for buildings modules at QCF level 5. The HND project module also contains essential elements of energy-efficient design and performance analysis of a particular industrial/research based projects including planning and project management skills. The summative and formative assessments are aligned to tackle **D1** in specialist modules at QCF level 5. **D2**: The health and safety compliance will be maintained throughout the course of their study. **D2**: is also covered in the professional engineering practice, applied control engineering and transformers and motors modules. User needs are covered in the project module in the context of standard requirements and understanding the electrical and electronic symbols, datasheets and specifications.

D3: In the module of professional engineering practice where entrepreneurial skills for engineers course consists of understanding and managing cost drivers working as technical engineer and ability to manage the design process and evaluate outcomes. Such skills will be applied somehow at QCF level 5 modules.

D4: Innovative technical solutions are taught in each specialist module, mainly at QCF level 5. The generic creative and innovative process are covered at QCF level 5 modules. Fitness of purpose as well as life-cycle product management is considered in modules in

	the professional and industrial thread and also in specialist modules at QCF level 5. **Assessment** **D1**: is accessed through examinations, formal reports and the final project reports. **D2**: Practical laboratory sessions and software workshops provide a means to assess this through assignments and logbooks. Examinations are also used to challenge students to design and critically analyse a system based on specific (that are necessarily brief) user requirements. Students will be encouraged to make taught-informed assumptions in order to demonstrate their understanding of the importance of requirements specification. **D3:** is assessed by assignment reports at different levels across modules that have a strong component. **D4**: are assessed via engineering reports and presentations. Some modules specifically employ practical simulation exercises as a major part of the assessment.

C. Teaching and Learning Strategy

General Learning Outcomes (UK-SPEC)

Knowledge and Understanding:

Diplomates must be able to demonstrate their knowledge and they must have an appreciation of the wider interdisciplinary electrical and electronic technical engineering context and its underlying principles. They must appreciate the social, environmental, ethical, economic and commercial considerations affecting the exercise of their engineering judgement.

Teaching and learning strategies:
Acquisition of knowledge and understanding of the following 12 modules:

- Electrical Circuit Analysis — QCF Level 4 (L4)
- Mathematics — QCF Level 4 (L4)
- Professional Engineering Practice — QCF Level 4 (L4)
- Object-Oriented Programming C++ — QCF Level 4 (L4)
- Digital Logic Design — QCF Level 4 (L4)
- Electronic Principles — QCF Level 4 (L4)
- Computer Systems and Networks — QCF Level 5 (L5)
- Applied Control Engineering — QCF Level 5 (L5)
- Transformers and Motors — QCF Level 5 (L5)
- Analogue Electronics — QCF Level 5 (L5)
- Electrical Services and Lighting for Buildings — QCF Level 5 (L5)
- HND Project — QCF Level 5 (L5)

All of the aforementioned modules are restructured and updated to teach and develop knowledge and understanding within the technical context of Electrical and Electronic Engineering. Those at higher levels involve operation and/or maintenance of systems to specifications.

Assessment

Assessment is through formative and summative that consists of written end-of-module examinations, practical laboratory logbooks, quizzes, phase tests, mini tests and assignments.

Intellectual Abilities:

Diplomates must be able to apply appropriate quantitative science and engineering tools to the analysis of problems. They must be able to demonstrate creative and innovative ability in the synthesis of solutions and in formulating designs. They must be able to comprehend the broad picture and thus work with an appropriate level of detail.

Teaching and learning strategies:

Acquisition is gained through the combination of QCF level 4 and level 5 modules such as professional engineering practice, C++ programming skills, electrical circuit analysis, digital logic designs, applied control engineering, computer systems and networks, analogue electronics, electrical services and lighting systems for buildings and construction and operation of transformers and motors. In these modules, students are taught the specialist technical based knowledge and appropriate tools to solve both practical and theoretical complex engineering problems.

Assessment

Intellectual abilities will be assessed through formative such as, workshop logbooks, presentations, phase tests and formal reports at various stages of HND project work and summative assessment such as end-of-module exam consists of critical and specialised technical questions for them to demonstrate their intellectual abilities.

Practical skills:

Diplomates must possess practical engineering skills acquired through, for example, work carried out in laboratories and workshops; in individual and group project work; in design work; and in the development and use of computer software to design, analyse and control. Evidence of group working and of participation in a major project is expected. However, individual professional bodies may require particular approaches to this requirement.

Teaching and learning strategies:

- Acquisition of practical skills is acquired during the practical laboratory sessions which constitute a part of nearly every module for this course.
- Professional Engineering Practice and Electrical Circuit Analysis at L4 offer the strong foundation to important electrical and electronic practical exercises.
- Applied Control Engineering at L5 offers control workshops as well as a variety of computer based laboratory exercises.
- Further development of these skills is acquired in the Level 5 modules such as: Transformers and Motors where students have an opportunity to construct and analyse the performance of transformer and understanding the performance of three phase induction motor. Advancement of their practical skills to specialised module of Electrical Services and Lighting for Buildings.
- By having the essential aforementioned skills, students will further enhance and practice with their HND Project at L5.

Assessment

Practical Skills are assessed by logbooks, coursework assignments and individual HND project report.

General transferable skills:

Diplomates develop transferable skills that will be of value in a wide range of situations. These are exemplified by the Qualifications and Curriculum Authority Higher Level Key Skills and include problem solving, communication, and working with others, as well as the effective use of general IT facilities and information retrieval skills. They also include planning self-learning and improving performance, as the foundation for lifelong learning/CPD.

Teaching and learning strategies:

Acquisition of GTS is achieved through communication of knowledge in formal reports and courses, including a CPD course. These constitute a part of the assessment for the majority of modules on the course to include,

- Professional Engineering Practice, L4
- Computer Systems and Networks, L4
- Applied Control Engineering, L5.
- Transformers and Motors, L5.
- Electrical Services and Lighting for Buildings, L5
- HND Project, L5.

Assessment

GTS skills are assessed by formal reports, presentations and viva voce examinations.

Teaching and Learning overview

The course is made up of several modules (see section G below) and each module is delivered through a combination of lectures, tutorials, practical workshops, computing workshops. All of which amounts to directed teaching (classroom contact). There is a variance in the makeup of the number of hours dedicated to lectures, workshops etc but the total number of study hours attracted by each module is dependent on the module weighting in credits. Typically, a 20-credit module, attracts 200 hours of learning which constitutes both directed learning and independent learning.

Independent Learning

The number of hours of independent learning required is dependent on the nature of the module. Generally, the number of hours of independent learning required increases as you progress from your first year (L4) to final year (L5). Typically, in most taught modules, the directed teaching varies between a third (65 hours at L4) to a quarter (52 hours at L5). This may significantly vary in some modules such as Mathematics where more support is offered and HND Project modules where more individual involvement is expected.

subject-related and generic resources

The core and optional reading lists are supplied at the end of each module guide produced by the module leader. A copy of the module guide will be made available on the Virtual Learning Environment, VLE (Moodle) and the reading lists can also be accessed through LSBU Library website (http://www1.lsbu.ac.uk/library/).

Learning Support

To support students in their learning journey, academic and support staff are available during the normal operating hours of the university via prior appointment. Academic staff also operate surgery sessions where no prior appointments are needed. The university buildings and library are open from 8am to 9pm during term time, while the library operates for an extended period during examinations. Some specialist workshops/computing spaces etc are not accessible outside the normal operating hours of 9am to 5pm, unless timetabled for use in a module. Teaching sessions for PT students run until 8/9pm and the relevant and required areas are open for access as timetabled.

All students are allocated a Personal tutor when they begin their study at LSBU and your personal tutor is who you would see about **any** problems, not just academic ones (most academic problems will probably be dealt with by module leaders or Course Directors). Students are advised to establish contact with their personal tutor ASAP, if for some reason you have not done this at during the enrolment and orientation process.

Teaching staff

Most modules are delivered by full-time academic staff from within the parent division where the course resides and often by staff from other areas within the school or university where expertise lies. Occasionally, PG students or part-time staff may support certain sessions, and, in such cases, the relevant tutors are trained and care is taken to ensure the quality of the provision.

VLE Moodle

Each course has a course site, where relevant information is posted by the respective course director.

Each module on the course has a Module site and all relevant teaching and learning material such as module guides, lecture notes, teaching slides, tutorial and seminar sheets, workshop exercises, past exam papers etc are made available by the module leader.

The virtual learning environment (Moodle) can be accessed using your LSBU login credentials and can be accessed from any internet connected PC inside or outside of the campus.

D. Assessment

Course work in modules can be either formative or summative and the details are usually made available in the module guide and explained to you by your module leader at the beginning of the semester. The module guide will also provide details as to the weightage of these assessment components and when the relevant brief will be made available, including submission instructions and deadlines.

Each module has a number of assessment *components*, usually, but not always, two. These can consist of assignments, mini tests, essays, laboratory reports and logbooks and examinations of various kinds. The assessment components for each module are specifically defined and kept up to date in the current Module Guides. Note that a component is not necessarily a single piece of work - several pieces of coursework (often referred to as a portfolio) may constitute a single component of the module assessment.

To pass a module, students must obtain an overall **module mark of no less than 40%** and also a minimum **threshold** mark of **30% in each component.** The weighting of each component in calculating the overall module mark is given in the Module Guide, and your module coordinator will often cover the details of this at the beginning of the module.

Progression means moving on from one year to the next, during your studies. You need to complete (pass) all modules taken/studied at that level by obtaining the minimum component marks and the minimum module marks. Occasionally, with the discretion of the exam board, you may be allowed to progress with an outstanding module(s) and your course director will explain you in detail about these. It is important that you understand how progression works and what the rules are. The rules about progression and what happens if you fail modules are carefully set out (along with all the other University rules) in your Student Handbook, a copy of which is handed to you during enrolment.

The rules about referrals, repeats and extenuating circumstances are defined by the University's Academic Regulations for Taught Programmes and are described in the Student Handbook and also included in your course guide.

E. Academic Regulations

The University's Academic Regulations apply for this course can be access via https://www.lsbu.ac.uk/__data/assets/pdf_file/0008/84347/academic-regulations.pdf .

Local protocols based on IET requirements will be applied for the accredited courses. Course specific protocols are usually prescribed by the professional bodies, accrediting the relevant courses. The HND doesn't have any such protocols for the course itself, but owing to the fact that many of these students after completing their HND would progress onto one of the BEng(Hons) undergraduate courses offered with in the division, which are all accredited by the IET and are bound by their recommendations/protocols which supersedes any applicable university protocols.

The IET's protocol, relating to the BEng courses that these students progress onto, requires that the resit mark for a module is capped to a maximum of 40% in the absence of a supported extenuating circumstances claim. Where a claim made by the student is supported by the university's extenuating circumstances panel, the student receives a full uncapped mark and such an attempt is termed as a deferral, as against a referral. Therefore, a similar protocol is also applied to this HND program.

Condonement of modules is not allowed on any of the IET accredited programs so that condition also applies to students on the HND who will usually progress onto the BEng. It is possible to condone a student from a module (as per the applicable university regulation), only if the student is exiting with a HNC/HND award and the particular student can no longer progress on to any of our accredited BEng courses.

F. Entry Requirements

In order to be considered for entry to the HND EEE PT course applicants will be required to have the following qualifications:

Part-Time Students

- 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 72/80 UCAS points
- Level 3 qualifications must include Maths or Physical Science

and

- Applicants must hold 5 GCSEs A-C including Maths and English or equivalent (reformed GCSEs grade 4 or above).
- We welcome qualifications from around the world. English language qualifications for international students: IELTS score of 6.5 **or** Cambridge Proficiency or Advanced Grade C.

In addition to the above a part-time student must have at least two years' experience of working in the Engineering industry or one closely related to it. Basic Mathematical skills and understanding of the science and technology modules with qualifications are preferred.

Accredited Prior Learning/Transfer Credit

Applicants may be considered for entry to the second year of the HND EEE course with the following qualifications. Applicants will normally be interviewed and may be required to sit a Mathematics and Electrical Circuit Analysis assessments to ensure their preparedness for direct year 2 entry.

- BTEC Higher National Certificate in Electrical and Electronic Engineering or a closely-related subject **or;**
- DipHE in a directly-relevant subject **or;**
- Transfer of 120 Level 4 credits from a directly-equivalent degree course and with the approval of the director of that course **or;**
- An overseas qualification assessed by UK NARIC as equivalent to at least BTEC HNC in a closely-related subject **and** an IELTS score of 6.5 or equivalent.

G. Course structure(s)

Course overview

- The LSBU academic year is organised into two semesters. Each semester consists of 15 weeks (12 teaching weeks, 1 revision week and 2 exam weeks) of attendance by students.
- The HND EEE course is made up of 240 credits. The course is made up of several modules, all modules attract 20 credits.
- The HND in EEE programme is offered as part-time spread across 5 semesters (2.5 years). The break-down of the 2.5 years credits are:
  - (a) Year 1 consists of 80 credits or 4 modules in Semester 1 and Semester2;
  - (b) Year 2 consists of 100 credits or 5 modules in Semester 3 and Semester 4.
  - (c) Year 2.5 or Semester 5 consists of 60 credits or 3 modules.
- The detailed structure is shown below.
- After graduation, students may choose to join one of our BEng (Hons) degree.

Mondays **80 Credits**

	Semester 1	Semester 2
YEAR 1	Mathematics	
	Object-Oriented Programming C++	Electrical Circuit Analysis
	Professional Engineering Practice	

Tuesdays **100 Credits**

	Semester 1	Semester 2
YEAR 2	Digital Logic Design	Electronic Principles
	Applied Control Engineering	
	Computer Systems and Networks	Transformers and Motors

Thursdays **60 Credits**

	Semester 1	
YEAR 3	Analogue Electronics	
	Electrical Services and Lighting for Buildings	
	HND Project	

L4 Module
L5 Module

H. Course Modules

Module Code	Module Title	Level	Semester	Credit value	Assessment	
					CW%	EX%
Mathematics	ENG_4_501	4	1 & 2	20	100% CW	
Electrical Circuit Analysis	ENG_4_XXX	4	2	20	50	50
Object-Oriented Programming C++	ENG_4_XXX	4	1	20	100% CW	
Professional Engineering Practice	ENG_4_XXX	4	1 & 2	20	100% CW	
Digital Logic Design	ENG_4_XXX	4	1	20	50	50
Electronic Principles	ENG_4_XXX	4	2	20	50	50
Computer Systems and Networks	ENG_5_XXX	5	1	20	50	50
Analogue Electronics	ENG_5_508	5	1	20	50	50
Transformers and Motors	ENG_5_506	5	2	20	50	50
Applied Control Engineering	ENG_5_XXX	5	1 & 2	20	50	50
HND Project	ENG_5_XXX	5	1	20	100% CW	
Electrical Services and Lighting for Buildings	ENG_5_XXX	5	1	20	30	70

I. Timetable information

Part-time students are timetabled for a single long day usually lasts from 9 am to 8pm, exceptionally 9pm.

The timetables are made available to students at least 2 weeks before commencement of the semester. Students are however advised to check their timetables via My LSBU, more frequently, in the early weeks of the semester, where there are usually some changes to rooms and/or re-arrangement of sessions.

Any changes to the timetable after the start of the term are also circulated by the respective module leaders and course director.

J. Costs and financial support

Course related costs

- The course fee is the fee published by the university's fee office. Field trips and placement activities, where organised, may cost extra and are not compulsory to attend but students are advised to utilise the opportunities where possible.

- Cost of books and other learning materials is also not included in the course fee. Learning resources are usually made available through VLE (Moodle) and the library holds copies of books recommended as core reading.

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The course can be found on the LSBU webpage by following the below link:
http://www.lsbu.ac.uk/courses/course-finder/electrical-electronic-engineering-btec-hnd

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

This map provides a design aid to help course teams identify where course outcomes are being Developed (D), Taught (T) and Assessed (A) 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**	**A 1**	**A 2**	**A 3**	**B 1**	**B 2**	**B 3**	**B 4**	**C 1**	**C 2**	**C 3**	**C 4**	**C 5**	**C 6**	**C 7**	**C 8**	**D 1**	**D 2**	**D 3**	**D 4**
4	Mathematics	ENG_4_501	TA	TA			TA	TA		TAD						TA				TA	TA
4	Electrical Circuit Analysis	ENG_4_XXX	TA	TA	TA	TA	TA	TA		TAD		TAD	TAD						TA	TA	TA
4	Digital Logic Design	ENG_4_XXX	TA	TA	TA	TA	TA	TA	TA		TA	TA				TAD					
4	Professional Engineering Practice	ENG_4_XXX	TA		TA	TA			TA	TA	TA	TA		TA	TA	TA				TAD	
4	Object-Oriented Programming C++	ENG_4_XXX	TA	TA		TA	TA			TA	TA							TA	TA	TA	
4	Electronic Principles	ENG_4_XXX	TA	TA		TA	TA		TA	TAD	TAD		TA								
5	Applied Control Engineering	ENG_5_XXX	TA	TA		TA	TA		TA	TAD	TA	TA		TAD				TA	TAD	TAD	TAD
5	Analogue Electronics	ENG_5_XXX	TA	TAD		TA	TA		TA	TAD	TA		TA			TA	TA			TA	TA
5	Transformers and Motors	ENG_5_XXX	TA	TA	TA	TAD	TA		TA		TA	TA	TA		TA	TA	TA		TA	TA	TA
5	Computer Systems and Networks	ENG_5_XXX	TA	TA		TA	TA			TA	TA							TA		TA	TA
5	Electrical Services and Lighting for Buildings	ENG_5_XXX	TA		TA	TA	TA	TA	TA		TA	TA							TA	TA	
5	HND Project	ENG_5_XXX	TAD	TAD		TAD	TAD			TAD	TAD		TAD	TAD		TAD	TAD	TAD		TAD	TAD

Appendix B: Embedding the Educational Framework for Courses at QCF Level 4, 5 and 6

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	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. Students should have access to employers and/or alumni in at least one module at level 4.	Industrial Advisory boards, both at school level and division level, feeds into the curriculum design through its twice annually convened meeting. Representatives from professional bodies, are invited to a short seminar session and students are informed about how they can engage with professional bodies and build relation with the local networking bodies to secure learning of state-of-the-art aspects of their discipline of engineering in the work arena and also to have access to facilities and professional networks operating in the local area. Students are encouraged to become student members of the professional body (IET) and the division pays for the membership to provide a sound start to their professional engagement. Alumni and employers are invited as guest speakers whose valuable inputs contribute to the student's ideas and activity.
Embedded learning development	Support for transition and academic preparedness 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.	Modules at L4 form the basis for academic preparedness and help them with transition to later years in their course. For e.g., The mathematics module provides the underpinning knowledge to enable them to think analytically. This is then reinforced in the Engineering computing module where mathematical models taught in the Mathematics module are now analysed and simulated using object-oriented programming C++ models. This allows students to dissect the model deeper and gain a better understanding in terms of boundary

		conditions and constraints within which these analytical models can be validated. Academic writing, in its various forms is introduced and strengthened when they produce a variety of reports for the various modules they study at L4: • As part of Professional Engineering Practice module, they produce individual and team reports. • The HND students also engage with a personal tutor (usually the Course Director), and are encouraged to maintain record of their meetings, produce a portfolio etc. • As part of the Object-Oriented Programming C++ module, they produce evidence of working on simulations through a comprehensive logbook and case study. • As part of the Digital Logic Design, they produce a logbook digitally, experience the submission of their records digitally through VLE, and receive individual feedback via the VLE. • As part of the modules Electrical Circuit Analysis, Transformers, Motors, Electrical Services, and Lighting for Buildings, students experience the work place scenario where they are required to follow basic health and safety aspects related to working in places where death by electrocution is a hazard. They also maintain a hand-written record of their experience in the workshop while they progress through a set of times exercises. This helps them to put learning into practice in a timely and organised way whilst also recording data in a meaningful way and they are encourage to pay attention to ease of retrievability of data. later.
High impact pedagogies	<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	The following modules, encourage and allow students to work in small groups of 2 to 3 in various settings, and experiencing various learning techniques be it peer learning, or communication and networking with their buddies and respect their diversity and individual perspectives:

	respect for diversity of perspectives relevant to **professionalism** and **inclusivity**. At least one module at level 4 should 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.	• Professional Engineering Practice • Transformers and Motors • Analogue Electronics • Digital Logic Design • Electrical Services and Lighting for Buildings Some module leaders, form groups where students are forced to work with random classmates in certain assignments and they are given a free choice to form groups for certain tasks.
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 teaching and learning materials are available as soft copies on the VLE in an appropriate accessible format. Module leaders also encourage students to approach them should they need the material in a different format.
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**.	The modules at L4 employ a range of course work assessments, categorised into formative or summative assessments that are integral to the learning and progression of all students. Formative assessments are important in the early years of a student's journey on the course as this will provide an opportunity to quickly act on the formative feedback obtained and work to address weaknesses which then helps them to progressively gain better marks in the later part of that assessment and other assessments. Also, due to the nature of the modules studied, sometimes summative assessment are more suitable as it takes time for students to develop their understanding of complex concepts and then fully put them into practice or use, in either a classroom exercise or a work-place related case study. In situations where summative assessments are undertaken,

		formative feedback forms part of the scheduled contact time/meetings between the students and member of academic staff. Feedback for summative assessments is generally provided to students within the recommended timeframe as per the school/university regulations, which is currently 2 weeks after submission. Summative assessments contribute with a lower weighting, to the final module mark. The weightings can range from 5 to 50% depending on the number and type of assessment components that form part of the course work for that specific module.
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 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.	Students on this course are required to undertake small-scale independent enquiry based study and contribute to either their individual projects/task or to a group/team project that they are part of. The module Professional Engineering Practice and HND Project, facilitates such aspects for students to experience as part of their individual and team tasks. The HND Project module at L5 builds on the students experiences and competencies gained in their L4 study and facilitates an open-ended, academically challenging aspect within the students own discipline where they are required to explore creative and innovative solutions. The above aspects feed into and further challenge the students when they progress onto the BEng course where they undertake their individual project at L6.
Curricula informed by employer and industry need /	<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	Students are invited to talks by alumni and the industrial advisory panel members, who often share their experiences and current issues in the industry, through case studies or presentations, relevant to the courses and this will help develop the understanding of students where they are

Assessment *for* learning	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.	able to see how their classroom knowledge can be transformed to provide solutions to problems in workplace.
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 themselves and their experiences in the curriculum as well as foster understanding of other viewpoints and identities.	Owing to the nature of the subject material, there will be little contribution based on cultural or social diversity among the students of the cohort. However, industry practices vary from country to country and since our student body is diverse and arrive form different countries, this then becomes contextual in their learning, for e.g. Earthing and Bonding techniques/arrangements are traditionally different in different countries and are also industry specific, so what is applicable to land-based equipment is not relevant to off-shore equipment etc
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.	Direct Work based learning is not part of this course, however PT students who currently work will have the benefit of immediately putting their knowledge into practice. PT students are often mixed in lectures and often contextually PT students share their work aspects and how they relate to the classroom learning. Assignments where possible are designed to be based on case studies, which are close to real world scenarios and guest talks often feed into these.

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.	The courses offers varying assessment aspects which supports students attempts to adopt ways of thinking and practising, which is underpinned by knowledge and skills gained, the formative feedback provided and the opportunities to put them into practice. Students also undertake a variety of presentation techniques, they are generally required to assimilate information while performing a task in the laboratory or during a group discussion and quickly note it down as a running commentary in a logbook for formal presentation. Further in their study, they are required to retrieve data from the information recorded which enables them to experience their own strengths and weaknesses associated with their personal style of recording information.
High impact pedagogies	<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.	Most of our student cohorts are very diverse and have varying entry qualifications and work in different sectors and are often working. This already brings in a rich and diverse perspective to the teams who work either on lab-based exercises or on specific group tasks as part of the modules that contribute to the development of soft skills at L4/L5.

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 (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.	The diversity and entry qualifications of the cohorts are considered when setting assessment which are approved by external examiners and are overseen by academic quality review processes, both through LSBU's internal reviews as well as period review at times of accreditation by the professional body. Variation to standard agreed assessments are possible but should be approved by the relevant external examiner and relevant professional body accrediting the course, the IET in this case.
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**.	This course provides opportunities and support to enable students to gain general employability skills with help from the university's employability office, such as career planning, Carer fairs etc Specific employability skills that are directly relevant to the industry are also developed as part of the course: For e.g. In Object-Oriented Programming C++, students are taught and trained to used C++ programming. More specifically, students will also be using specialised Electrical and Electronic Engineering software's which are widely used in the industry and is an important competency to add to their CV.
Curricula informed by employer and industry need /	<u>Capstone project/dissertation</u> The level 6 project or 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	Not applicable as this is only a L5 course.

Assessment *for* learning / High impact pedagogies	capstone experience, bringing together all learning across the course and creates the opportunity for the development of student outcomes including **professionalism**, **integrity** and **creativity**.	

Appendix C: 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. Course teams are asked to indicate where/how in the course/across the modules this process is supported.

Approach to PDP	LEVEL 4	LEVEL 5
1 Supporting the development and recognition of skills through the personal tutor system.	All students allocated a personal tutor– coordinated by the Senior Personal Tutor. Personal tutoring is facilitated at the beginning of the students journey on the course where students are given the opportunity to learn about the aspects of issues and concerns on their course. Personal Tutors open surgeries are bookable on demand. Induction course, including: (a) Meeting with personal tutor; (b) Use of library and learning resources (LIS); (c) Use of University IT facilities/Moodle VLE (d) Study skills. (e) Access to LSBU University student support team.	Induction for direct entry students. See Level 4
2 Supporting the development and recognition of skills in academic modules/modules.	Most modules have practical elements and this requires keeping a laboratory log book for each module. This occurs across all levels of the course but particular emphasis is placed on this aspect at L4 as logbooks provide a platform for further skills development such as report writing, dissertations etc at higher levels. The following L4 modules have generic skills components, including keeping a laboratory logbook, team-working, planning and managing study: Mathematics, Professional Engineering Practice, Electrical Circuit Analysis, Object-Oriented Programming C++, etc.	Following on from L4 students continue the practice of keeping log books but this is now complemented in technical modules at L5 by writing formal laboratory reports which requires other skills such as information retrieval and IT.

3 Supporting the development and recognition of skills through purpose-designed modules/modules.	Professional Engineering Practice– this module aims to introduce and develop the skills needed by professional engineers to enable them to make use of their technical knowledge, in particular: • Develop students' technical communications, basic report writing and team-working skills• Develop students' skills in project planning and management• Develop students' confidence in undertaking self-managed practical projects.	HND Project L5 prepares students for their role as professional engineers in a number of ways, including: • Detailed study of project planning and networking techniques• Planning and preparation for the major project at L5• Introduction to systems thinking
4 Supporting the development and recognition of skills through research projects and dissertation work.	Team activities in L4 concentrates development of these skills.	Mini-projects, assignments and dissertations are featured in modules at L5.
5 Supporting the development and recognition of career management skills.	Students have an introduction to the engineering profession and professional bodies in Engineering Applications.	Students have access to use the Careers office support services for interview training etc.
6 Supporting the development and recognition of career management skills through work placements or work experience.	Not applicable	Not applicable

7 Supporting the development of skills by recognising that they can be developed through extracurricular activities.	. Students are encouraged to start their own 'clubs' and laboratory facilities and specific notice-boards are made available for this. There is a DEEE society for the students studying in the Division of EEE to join to participate in a range of extra-curricular activities.	Students can study a language to prepare for exchange courses with overseas links.
8 Supporting the development of the skills and attitudes as a basis for continuing professional development.	Students are encouraged and sponsored to join the relevant professional body for the course.	See L4
9 Other approaches to personal development planning.	The personal tutoring initiative will facilitate the student to start thinking and discussing his PDP with his personal tutor, usually the CD of this course.	
10 The means by which self-reflection, evaluation and planned development is supported e.g. electronic or paper-based learning log or diary.	Students must keep a personal technical logbook for each module with a laboratory or computer workshop component. This is marked periodically and returned with comments and advice. At L4 this forms the basis of the majority of the coursework mark in technical modules.	See L4. The logbook may form part of the coursework in some modules but this is supplemented by formal reports, mini-projects, and dissertations in most technical modules.

Appendix D: 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