Programme Specification

Awarding Body/Institution	QMUL and Beijing University of Posts and Telecommunications
Teaching Institution	QMUL and BUPT
Name of Final Award and Programme Title	BSc(Eng) E-Commerce Engineering with Law
Name of Interim Award(s)	
Duration of Study / Period of Registration	4 years
QM Programme Code / UCAS Code(s)	H6NF
QAA Benchmark Group	Engineering, but benchmarks subsumed by UKSPEC
FHEQ Level of Award	Level 6
Programme Accredited by	Institution of Engineering and Technology
Date Programme Specification Approved	
Responsible School / Institute	School of Electronic Engineering & Computer Science

Schools which will also be involved in teaching part of the programme
Centre for Commercial Law Studies

Institution(s) other than Queen Mary that will provide some teaching for the programme
BUPT

Programme Outline

This is a comprehensive programme covering telecommunications and the way it supports the delivery of e-commerce. Telecommunications is the particular strength of BUPT, being a focal theme across the university that is delivered by highly skilled staff in this discipline.

Law is an important component of this programme. Engineers in the field need to acquire a good understanding of the relevant local and global laws impacting electronic commerce activity as well as the ability to successfully manage legal risks in this complex and frequently ambiguous legal environment.

In addition to the technology, the programme includes the contextual and "soft" skills that are incorporated across the range of JP programmes, these being specifically commended by the QAA.

Aims of the Programme

The programme sets out provide graduates with:
- A solid fundamental knowledge of telecommunications to support the delivery of e-commerce;
- An understanding of network design and network planning principles;
- A knowledge of the theory, methodology and techniques for the software development of e-commerce applications;

- A good overall understanding of the relevant laws and legal issues in this field.

This programme covers telecommunications and the way it supports the delivery of e-commerce. It provides graduates with excellent employment opportunities covering the field of telecommunications and related management. It combines comprehensive and relevant material developed at QM, together with the specialised scientific content from BUPT, encompassing technologies that are relevant both in China and internationally.

The Law modules supplement the core engineering content giving a good understanding of the relevant local and global laws impacting electronic commerce activity. The programme provides graduates with the ability to successfully manage legal risks in this complex and frequently ambiguous legal environment. Additionally, the business and management modules, enable students to:
- Understand business terminology and concepts, to appreciate the processes involved and to assess the potential rewards / challenges and risks
- Communicate effectively with other commercial departments, e.g., sales, marketing, and accounting
- Apply what they learnt to formulate and implement business strategies, better design and develop new products or services, and to become better managers

What Will You Be Expected to Achieve?

At the end of his/her degree, each student should be able to demonstrate the following abilities:
• the ability to recall factual knowledge and the ability to apply it in familiar and unfamiliar situations;
• the ability to apply scientific, mathematical and software 'tools' to a familiar or unfamiliar situation;
• the ability to use Information Technology as a key tool pervading all aspects of Telecommunications, Management and Law;
• the ability to understand practical issues concerning real systems (whether hardware or software);
• the ability to recognise insufficient existing knowledge and the ability to search for the necessary scientific, mathematical and software 'tools' relevant to that particular issue;
• the ability to work as part of a team;
• the ability to manage time effectively;
• the ability to appreciate the financial background against which decisions are made in industry;
• the ability to show a certain level of reflection on the role of engineering in society;
and the following skills:
• the perceptive skills needed to understand information presented in the form of technical circuit-diagrams, flow-charts and high-level languages;
• the practical skills needed to implement a piece of hardware or software and to use laboratory test equipment;
• the analytical skills needed to verify the correct behaviour of a hardware or software system or component and to be able to identify faults;
• the design skills needed to synthesise a design (in hardware and/or software) from a specification (including the choice of the best option from a range of alternatives), to implement the design and to evaluate the design against the original specification;
• the written and oral communication skills needed to present information, in particular written information, effectively;
• the critical reasoning skills needed to appraise a particular topic;

Context-based aims and objectives:
• to be able to explain the impact that law or developing laws could have on online commercial activities;
• to give students enough understanding and problem solving skills to alert them to the many risks facing e-commerce and when to seek legal advice;
• to be able to identify issues and legal requirements in the practice of e-commerce engineering activities, such as ethical issues and safety (e.g. hearing damage prevention);
• to be able to analyse the advantages and limitations of various business models, and the impact of technologies on the transformation of global supply chains;
• to be able to apply quantitative methods and computer software to solve multimedia engineering problems (e.g. processing, compression and segmentation);
• to be able to demonstrate a firm theoretical foundation in economics and management, understand modern information science and technologies, and who can engage in the operations and management side of e-commerce businesses
• to be able to discuss the need of ethical conduct in the practice of e-commerce engineering, for example in relation to copyright protection.

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	Academic Content:
A 1	[US1] Knowledge and understanding of scientific principles and methodology necessary to underpin their education in their engineering discipline, to enable appreciation of its scientific and engineering context, and to support their understanding of historical, current and future developments and technologies.
A 2	[US2] Knowledge and understanding of mathematical principles necessary to underpin their education in engineering discipline and to enable them to apply mathematical methods, tools and notations proficiently in the analysis and solution of engineering problems.
A 3	[EA1] Understanding of engineering principles and the ability to apply them to analyse key engineering processes.
A 4	[EA3] Ability to apply quantitative methods and computer software relevant to the engineering discipline, in order to solve engineering problems.
A 5	[EA4] Understanding of a systems approach to engineering problems and to work with uncertainty.
A 6	[D2] Understand customer and user needs and the importance of considerations such as aesthetics.
A 7	[P6] Awareness of appropriate codes of practice and industry standards.
A 8	[P7] Awareness of quality issues

	Disciplinary Skills - able to:
B 1	[US3] Ability to apply and integrate knowledge and understand of other engineering disciplines to support study of their own engineering discipline.
B 2	[EA2] Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.
B 3	[D1] Investigate and define a problem and identify constraints including environmental and sustainability limitation, health and safety and risk assessment issues.
B 4	[D3] Identify and manage cost drivers.
B 5	[D4] Use creativity to establish innovative solutions.
B 6	[D5] Ensure fitness for purpose for all aspects of the problem including production, operation, maintenance and disposal.
B 7	[D6] Manage the design process and evaluate outcomes.
B 8	[P1] Knowledge of characteristics of particular materials, equipment, processes, or products.
B 9	[P8] Ability to work with technical uncertainty.
B 10	.. produce a coherent technical presentation in written or oral form;
B 11	.. present a coherent argument;
B 12	.. acquire and apply knowledge in a rigorous way to new and unfamiliar situations;
B 13	.. use quantitive data in analysis and synthesis in engineering problems.

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Attributes:	
C 1	[S1] Knowledge and understanding of commercial and economic context of engineering processes.
C 2	[S2] Knowledge of management techniques that may be used to achieve engineering objectives within that context.
C 3	[S3] Understanding of the requirement for engineering activities to promote sustainable development.
C 4	[S4] Awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk).
C 5	[S5] Understanding of the need for a high level of professional and ethical conduct in engineering.
C 6	[P3] Understanding of contexts in which engineering knowledge can be applied (e.g. operations and management, technology development, etc).
C 7	[P4] Understanding use of technical literature and other information sources.
C 8	[P5] Awareness of nature of intellectual property and contractual issues

How Will You Learn?

All taught courses involve lectures, problem solving coursework, laboratory work, case study and independent study. Lectures are used to introduce principles and methods and also to illustrate how they can be applied in practice. Coursework allows students to develop their skills in problem solving and to gain practical experience. Laboratory work provide students with the guidance and help while solving a problem using a wide range of tools and techniques. This allows students to learn-by-doing in order to complement the lectures. QM Graduate Attributes are available for all JP students to identify students' attributes and develop students' knowledge, skills and behaviour that employers' value.

How Will You Be Assessed?

The assessment of the taught course units takes place through a written examination and practical coursework. Some courses also include in-class tests as a component in assessment.

The final year project is examined on the basis of a written report, a formal oral presentation, and a demonstration of the piece of software or hardware developed by the student. In addition to the final year project, other modules introduce project and group working skills.

Examinations must contribute at least 70% of the overall marks to satisfy IET Accreditation.

How is the Programme Structured?

Most modules are shown with a value of 15 credits. This is to simplify the procedure to fit the QM system. EBU modules are actually 44 contact hours instead of 33 so should count for more than 15 credits; BBx modules use Chinese credits that do not map exactly to QM credits. The exception is Personal Development Plan (PDP) which is 1.8. Engineering Environment is a mix of

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QM and BUPT modules that does not have any specific credits but counts 5% towards the award of Honours and exists in all JP modules, with a slightly different mix depending on programme; PDP counts towards Engineering Environment but does not have any real credits by itself, although it is shown on the transcript.

In addition there are more modules than in a degree in London in order to satisfy Chinese requirements - the module load is not symmetrical across semesters as the technical modules are balanced with the Chinese compulsory modules not shown.
All modules are taught in English and every module must be passed for a degree to awarded (Chinese regulations) - so are all shown as core.

JP programme has two parts: technical content and compulsory courses. The degree is awarded on the basis of the technical content, but the compulsory part must be passed to get a degree to comply with Chinese MoE requirements.

Only modules shown on the QM transcript counting towards the award of Honours are included; Chinese compulsory courses are not shown in detail, nor are short summer semester modules, but these must all be passed for the award of the degree so a pass/fail module is included to allow that to be handled at QM.

Note that each unit is assigned credits based on contact time; again these are Chinese requirements.

Academic Year of Study   1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
English Language and Study Skills 1	BBC3915	15	3	Core	0	Semester 1
Advanced Mathmatics 1	BBC4911	15	4	Core	0	Semester 1
Linear Algebra	BBC4913	15	4	Core	0	Semester 1
Personal Development Plan 1	EBC3001	5	3	Study only	0	Semesters 1 & 2
Programming Fundamentals	BBU4161	15	4	Core	0	Semester 2
English Language and Study Skills 2	BBC3924	15	3	Core	0	Semester 2
Introduction to Electronic Systems	BBC4102	15	4	Core	0	Semester 2
Advanced Mathmatics 2	BBC4921	15	4	Core	0	Semester 2
Physics C	BBC4924	15	4	Core	0	Semester 2

Academic Year of Study   2

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Engineering Mathematics 2	BBC4111	15	4	Core	1	Semester 1
Discrete Techniques for Computing	BBC4113	15	4	Core	1	Semester 1
Signals and Systems Theory	BBU4374	15	4	Core	1	Semester 1
Personal Development Plan 2	EBC4001	5	4	Study only	1	Semesters 1 & 2
Enterprise Management	EBU5402	15	5	Core	1	Semester 1
Digital Circuit Design	EBU4202	15	4	Core	1	Semester 2
Communication Skills 1	BBC4106	5	4	Core	1	Semester 1
Probability Theory and Mathematical Statistics	BBC4943	15	4	Core	1	Semester 2
Introductory Java Programming	EBU4201	15	4	Core	1	Semester 2
Product Development and Marketing	EBU5606	15	5	Core	1	Semester 2
Database	EBU5602	15	5	Core	1	Semester 2
Communication Skills 2	BBC4107	10	4	Core	1	Semester 2

Academic Year of Study 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Data Mining	BBU6504	15	6	Core	2	Semester 1
Advanced Network Programming	EBU5042	15	5	Core	2	Semester 1
Personal Development Plan 3	EBC5001	5	5	Study only	2	Semesters 1 & 2
e-Commerce Law	EBU5027	15	5	Core	2	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Telecommunications Systems	EBU5302	15	5	Core	2	Semester 1
Internet Protocols	EBU5403	15	5	Core	2	Semester 1
Intellectual Property Law	EBU6016	15	6	Core	2	Semester 2
Logistics and Supply Chain Management	EBU6609	15	6	Core	2	Semester 2
Software Engineering	EBU6304	15	6	Core	2	Semester 2
Information and Privacy Law	EBU6008	15	6	Core	2	Semester 2

Academic Year of Study   4

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Project	BBC6521	30	6	Core	3	Semesters 1 & 2
Engineering Environment (E-commerce)	EBC6011		6	Core	all years	Semesters 1-3
Chinese Compulsory Topics	BBF7000		7	Core	all years	Semesters 1-3
Business Technology Strategy	BBU7031	15	7	Core	3	Semester 1
Information Systems Management	EBU6610	15	6	Core	3	Semester 1
Security and Authentication	EBU7140	15	7	Core	3	Semester 1

What Are the Entry Requirements?

Pass the minimum entry requirements for BUPT. As a national key university, all entrants to BUPT must score above the top line in the Chinese national entrance examinations. In addition, BUPT's requirement is much higher than that and the level is approximately equivalent to the top 2-3% of the population in China of that age group.

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How Do We Listen and Act on Your Feedback?

The Staff-Student Liaison Committee (SSLC) provides a formal means of communication and discussion between QM and BUPT and JP students. The committee consists of student representatives from each year in JP together with appropriate representation from staff within the QM and BUPT. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. SSCLs meet twice a semester.

The JP operates an Academic Committee which is responsible under the contract and MoE licence for all matters relating to the delivery of taught programmes at school level including monitoring the application of relevant QM policies and reviewing all proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in this Committee's work in a number of ways, such as through student membership, or consideration of student surveys.

The JP operates an Annual Programme Review of the taught undergraduate provision. The process is normally organised with the Director and co-Director of JP who responsible for the completion of the school's Annual Programme Reviews. Schools/institutes are required to produce a separate Annual Programme Review for undergraduate programmes using the relevant Undergraduate Annual Programme Review process. Students' views are considered in this process through analysis of the module evaluations and SSLC comments. In addition BUPT conducts a biannual review of all programmes.

Academic Support

IInduction and pastoral support is provided through BUPT. Students are organised into "classes" of 30 as in the usual Chinese model. Each class has a tutor who provides pastoral support. One male and one female tutor sleep on campus every night so there is 24/7 access to pastoral support.
Feedback mechanisms from students are: (i) directly to the lecturers (ii) to their tutor (as described above) and (iii) through an SSLC that meets twice a semester. Because of the large numbers of students, a separate SSLC is held for each cohort.
For every module, whether taught by QM or BUPT, formal office hour or tutorial slots are provided. In addition QM staff can give advice and supervision remotely using a variety of techniques including Skype, MSN and the cloud-based Nefsis conferencing system.

Programme-specific Rules and Facts

The Special Regulations for the JP apply to this programme.

Specific Support for Disabled Students

A specific disabled students support that complies with Chinese law is applied to this programme since the students are physically in China.

Links With Employers, Placement Opportunities and Transferable Skills

There is an industrial advisory committee consisting of senior staff from the Chinese Telecommunications industry. A dedicated Industrial Liaison Manager is part of the JP team to develop links with industry and industrial projects, to ensure that projects are appropriate and to monitor their progress. A good industrial project provides excellent experience for an engineering

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undergraduate. There is a compulsory internship for all year 3 summer students and frequent invited industry lectures to year 3 and 4 students.

To date the JP has a record of 100% employment or PG education.

In fact, most JP graduates (>80%) go on to PG education

Programme Specification Approval

Person completing Programme Specification

Ling Ma

Person responsible for management of programme

Michael Chai

Date Programme Specification produced/amended by School Learning and Teaching Committee

Date Programme Specification approved by Taught Programmes Board

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