

**Programme Specification for Postgraduate Programme  
Leading to:  
MSc Distributed Computing Systems Engineering**



*Applicable for all postgraduate students starting on or after 1<sup>st</sup> September 2018*

<u>Version No.</u>	<u>Date</u>	<u>Notes – QA USE ONLY</u>	<u>QAM/O</u>
2018/19 v1	24 August 2018	Programme specification for 2018 entrants.	JP

<b>Postgraduate Taught Programme</b>	
1. Awarding institution	Brunel University London
2. Teaching institution(s)	Brunel University London
3. Home college/department/division	College of Engineering, Design and Physical Sciences/ Dept of Electronic and Computer Engineering / Electronic and Computer Engineering/
4. Contributing college/department/division /associated institution	Technische Akademie Esslingen (TAE)
5. Programme accredited by	To be sought from IET.
6. Final award(s) and FHEQ Level of Award	MSc Distributed Computing Systems Engineering FHEQ level 7
7. Programme title	MSc Distributed Computing Systems Engineering
8. Programme type (Single honours/joint)	N/A
9. Normal length of programme (in months) for each mode of study	FTN: 18 Months (Taught Element F/T and Dissertation P/T)
10. Maximum period of registration for each mode of study	FTN: Normal period of study plus two years up to a maximum of five years
11. Variation(s) to September start	N/A
12. Modes of study	FTN
13. Modes of delivery	Off-campus only.
14. Intermediate awards, titles and FHEQ Level of Award	Postgraduate Certificate in Distributed Computing Systems Engineering - FHEQ Level 7 Postgraduate Diploma in Distributed Computing Systems Engineering - FHEQ Level 7
15. UCAS Code	N/A
16. JACS Code	H650
17. Route Code	H650PSDISCPE
18. Relevant subject benchmark statements and other external and internal reference points used to inform programme design	<a href="#">QAA UK Quality Code for Higher Education</a> which includes the English Framework for Higher Education Qualifications within Part A on Setting and Maintaining Academic Standards <a href="#">QAA Subject Benchmark Statement (Engineering)</a> <a href="#">Brunel University London 2030</a> Brunel Placement Learning Policy, as published under the 'Placements' section of the ' <a href="#">Managing Higher Education Provision with Others</a> ' page.
19. Admission Requirements	Details of <a href="#">PGT entry requirements</a> are provided on the University's and College website. Levels of English for non-native speakers are outlined on Brunel International's <a href="#">language requirements</a> pages.
20. Other relevant information (e.g.	

study abroad, additional information on placements)	N/A
21. Programme regulations not specified in Senate Regulation 3. Any departure from regulations specified in Senate Regulation 3 must be stated here and approved by Senate.	N/A
22. Further information about the programme is available from the College website.	<a href="#">MSc Distributed Computing Systems Engineering</a>

### 23. EDUCATIONAL AIMS OF THE PROGRAMME

The aims of the programme are to produce graduates who:

1. by virtue of their expertise in key distributed computing and embedded systems are highly employable, particularly in industries associated with the development of distributed and embedded systems.
2. can demonstrate, in theory and practice, a deep understanding of network analysis and can demonstrate its practical implementation.
3. have sufficient detailed technical knowledge and experience, gained through the taught modules and dissertation project, to contribute effectively and rapidly in an employment environment in a distributed and embedded system industry.
4. have experience of analysing and solving complex practical industrial problems at the forefront of developments in distributed and embedded systems.
5. have a range of transferable skills and qualities necessary for employment in an advanced technical sector, especially to:
  - communicate technically complex issues to specialist and non-specialist audiences;
  - work autonomously or within a team to solve new problems;
  - undertake advanced training of a professional or academic nature.

## 24. PROGRAMME AND INTERMEDIATE LEARNING OUTCOMES

The programme provides opportunities for students to develop and demonstrate knowledge and understanding (K) cognitive (thinking) skills (C) and other skills and attributes (S) in the following areas:

Level	Category (K = knowledge and understanding, C = cognitive (thinking) skills, S = other skills and attributes)	Learning Outcome	Masters Only	Associated Assessment Blocks Code(s)	Associated Study Blocks Code(s)	Associated Modular Blocks Code(s)
5	K	Knowledge and understanding of the terminology and concepts of distributed and embedded systems.				EE5503 EE5531 EE5615 EE5616 EE5610 EE5571 EE5614 EE5500
	K	Knowledge and understanding of advanced computer networks.				EE5503 EE5553
	K	Knowledge and understanding of current and emerging technologies for distributed systems.				EE5615 EE5616 EE5571
	K	Knowledge and understanding of project management techniques and management of change.				EE5620 EE5500
	K	To recognise solutions appropriate for distributed and embedded systems.				EE5503 EE5531 EE5615 EE5616 EE5610 EE5571 EE5614 EE5500

	C	Able to critically assess new developments in distributed and embedded systems.				EE5503 EE5531 EE5615 EE5616 EE5610 EE5571 EE5614 EE5500
	C	Able to critically evaluate current research and technology in the field of distributed computing, and to evaluate methodologies and develop critiques of them, and, where appropriate, to propose new hypothesis.				EE5615 EE5616
	C	Able to review and draw conclusions from current literature in a technically complex area.	√			EE5500
	C	Able to identify and apply appropriate methods (theoretical or empirical, analytical or computational) to specific problems in the field of distributed systems.				EE5615 EE5616 EE5500
	C	Able to work effectively in a team.				EE5615 EE5616 EE5500
	S	Able to present complex issues and arguments in both written and oral forms.				EE5503 EE5531 EE5615 EE5616 EE5610 EE5571 EE5614 EE5500
	S	Able to employ state of the art simulation software to investigate and evaluate design solutions.				EE5503 EE5531 EE5615 EE5616 EE5610 EE5571 EE5614 EE5500
	S	Able to write up a research investigation in a concise and coherent document, conveying the main conclusions to a non-specialist audience.	√			EE5500

	K	Gain knowledge and understanding of strategic context and importance of project control and management, and the appropriateness of management techniques				EE5620
	C	Analyse and employ appropriate means and techniques of personal, resource and cost of project control and management				EE5620

**Learning/teaching strategies and methods** to enable learning outcomes to be achieved, including formative assessments

- Knowledge and understanding in the areas indicated are acquired through a mix of lectures, workshops, seminars, self-study, and individual and group project work. In lectures key concepts and ideas are introduced, definitions are stated, techniques are explained, and immediate student queries discussed. Workshops sessions are used to foster practical engagement with the taught material.
- Team work, effective communication, critical review and research skills are developed primarily through completion of carefully designed lab exercises, completion of group assignments, and through the dissertation project
- Other skills and attributes are developed primarily through completion of carefully designed lab exercises, completion of group assignments, and through the dissertation project

**Summative assessment strategies and methods** to enable learning outcomes to be demonstrated.

Assessment will allow students to demonstrate their abilities in a range of styles relevant to professional Electrical and Electronics Engineers. These will include:

- Essays and reports – demonstration of depth and breadth of knowledge and written communication skills
- Technical analytical reports – ability to collect, analyse and interpret a range of evidence, including in the laboratory
- Group report – contribution as a team member to a collaborative challenge
- Formal examinations – ability to quickly formulate arguments and solve problems
- Dissertation – ability to plan, critically review, execute and communicate an advanced piece of research – EE5500, the Dissertation specification, requires students to undertake research relevant to their specific programme.

Deadlines will be distributed through the year, allowing time for constructive feedback.

## 25. Programme Structure, progression and award requirements

Programme structures and features: levels, assessment blocks, credit and progression and award requirements

- **Compulsory block:** one which all students registered for the award are required to take as part of their programme of study. These will be listed in the left hand column;
- **Optional block:** one which students choose from an 'option range'. These will be listed in the right hand column;
- A **core assessment** is an assessment identified within an assessment block or modular block (either compulsory or optional) which must be passed (at grade C- or better) in order to be eligible to progress and to be eligible for the final award. All core assessments must be specified on the programme specification next to the appropriate assessment or modular block:  
Where students are expected to pass the block at C- or better, but not necessarily all elements, then the block itself is core.  
e.g. AB5500 Project (40)  
Core: Block  
Where only some elements of assessments are required to be passed at C- or better, these will be identified by listing each element that is core  
e.g. ABXXX1 Title (XX credits)  
Core: 1 & 4  
Where students are expected to pass all assessments in a block then this will be identified. By setting the assessment this way, students are also required to pass the block by default. This will be identified thus:  
e.g. ABXXXX Title (XX credits)  
Core: All, Block
- A **non-core assessment** does not have to be passed at grade C- or better, but must D- or better in order to be eligible for the final award.

### Level 5

**Compulsory assessment block codes, titles and credit**

**Optional assessment block codes, titles and credits**

**Compulsory study block codes, titles and credit volume**

**Optional Study block codes, titles and credit volume**

**Compulsory modular block codes, titles and credits**

**Optional modular block codes, titles and credits**  
**None**

EE5615: High Performance Computing and Big Data (15)

EE5616: Software Engineering (15)

EE5610\_CE Network Security and Encryption (15)

Please note: to achieve a C- grade or better in the module students must achieve a minimum grade of D- in both the laboratory component of assessment and the examination.

EE5531: Distributed Systems Architecture (15)

EE5503: Computer Networks (15)

EE5571: Embedded Systems Engineering (15)

Please note: to achieve a C- grade or better for the module students must achieve a minimum grade of D- in both the Group project and the examination.

EE5614: Intelligent Systems (15)

EE5620: Project Control and Management (15)

EE5500: Dissertation (60 Credits – Core Block)

### Level 5 Progression and Award Requirements

[As per Senate Regulation 3](#)

**PGDip may not be awarded by substitution of the dissertation (EE5500) for modular/assessment blocks in the taught part of the programme.**

Please note: this specification provides a concise summary of the main features of the programme and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods can be found in the modular block, assessment and study block outlines and other programme information. The accuracy of the information contained in this document is reviewed by the University from time to time and whenever a modification occurs.