



# New Route PhD programme in UK

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# NewRoutePhD™

- developed with full support of the UK Government, the Higher Education Funding Council of England (HEFCE) and the British Council

# NewRoutePhD™

- an integrated programme of postgraduate training which combines research with a structured programme of advanced training in discipline specific and generic skills
- is designed to place students in an enhanced learning environment, where their achievements in research are underpinned by a structured programme of formal training
- equips independent researchers with the personal and transferable skills required to make a significant contribution to their chosen field

# Why the New Route PhD?

Whether as professional educators, researchers or business leaders, the high level of training on this course will give you a distinctive competitive edge when entering the world of work.

New Route PhD students benefit from:

- an individually designed structured research programme
- explicit training in effective research skills
- acquisition of generic skills, including leadership and enterprise
- high likelihood of completion within timeframe
- development as an independent researcher
- enhanced student support and guidance throughout the PhD
- award of Postgraduate Diploma in addition to the PhD

# Programme structure

- Generic training in professional and personal skills is provided throughout the programme.
- Taught masters level courses provide advanced theoretical and practical research skills to ensure a secure knowledge of the research area.

# The development of thesis

- supported and guided by two supervisors who will be academics working in specialised area
- assigned a programme coach from the Graduate School
- regular 3-way Advisory Panel meetings (comprising programme coach, supervisor and research student) provide continual review of your training needs and achievements.
- regular Group Development Meetings take place between the programme coach and student cohort as a whole.

# Taught programme

- promote critical analysis, independence of thought, an awareness of broader issues which create an impact on the environment of research and an understanding of subject-specific knowledge at the forefront of your discipline

# New Route PhD Modules

Module Title	ECTS Credits
Theory and Practice in Research	7.5
Research Design, Methods and Analysis (Behavioural/Physical Sciences)	15
Research Management, Leadership and Personal Development	7.5
Academic Research Dissemination	7.5
Knowledge Exchange and Research Impact	7.5
Guided Study or Subject-specific modules	15
<b>Total</b>	<b>60</b>



# Discipline-specific modules: Electronic and Computer Engineering

- Data Communications
- Computer Networks
- Coding for compression and data security
- Network planning
- Satellite Optical and Mobile Communication
- Multi-media Systems and Web Technology
- Computer Architecture
- Object-oriented Design
- Software Engineering
- Parallel Computer Architecture
- Distributed Systems

# Brunel contribution to NETCENG

- **Core curricula**
- Systems modelling and simulation
  - 5 ECTS, 30 contact; 90 hours student workload
- Power Electronics & Systems
  - 3 ECTS, 46 contact hours; 30 hours students workload
- Materials Science and Solidification Processing
  - 2 ECTS, 20 contact hours; 20 hours student workload

# Indicative content:

## Systems modelling and simulation

- Principles of manufacturing systems, modelling and simulation.
- Principles of systems engineering. Modelling and analysis of Discrete Systems,
- Material Flow systems (assembly lines, transfer lines, serial systems, shop scheduling, Flexible Manufacturing, Group technology, Facility layout)
- Machine setup and operation sequence; Material Handling systems
- General Modelling approaches (Queuing Models)
- Process Simulation and data analysis, enterprise operations
- Supply chain and logistics-reverse logistics modelling concepts

# Brunel contribution to NETCENG

- **Transferable curricula**
- Theory and Practice in Research
  - 2 ECTS, 24 contact, 30 hours student workload

# Theory and Practice in Research: motivation

- The main emphasis is on developing students' understanding of the nature of research and the philosophical assumptions that underlie approaches to knowledge acquisition.
- The module also aims to provide a broad overview of the range of issues involved in conducting PhD research to provide a foundation for the modules that follow.

# Indicative content:

## Theory and Practice in Research:

### structure

1. Philosophical underpinnings of enquiry
2. Objectivity and Subjectivity
3. Science Research
4. Social and Human Research
5. The Role of methods and Techniques (in specific areas)
6. Practical Research Issues
7. Research and Society
8. Research Policy

