PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	MSc
4	**Programme Title**	Electrical Power Electrical Engineering (exit award)
5	**UCAS/Programme Code**	5059F 5467F (exit award)
6	**Programme Accreditation**	IET
7	**QAA Subject Benchmark(s)**	N/A
8	**FHEQ Level**	7
9	**Date written/revised**	May 2024

10 Programme Aims

The programme aims:

- to gain an advanced knowledge and understanding of specialist topics in Electrical Power
- to develop transferable skills in research and knowledge acquisition
- to satisfy the professional development needs of the individual and his/her employers; providing relevant training to engineering graduates who wish to pursue a career as design and development engineers in power electronics, electrical machines and electrical drives systems
- to provide a foundation for further postgraduate studies

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge, understanding, skills and other attributes associated with the theme of Electrical Power.

Knowledge and Understanding

A successful student will have gained and be able to demonstrate:

A1 A knowledge and understanding of a total of 6 advanced topics in the field of Electrical Power: Power Electronics, State Space Analysis and Controller Design, Control of Electric Drives, Design of Modern Electrical Machines and Drives, Electrical Machines and Power Systems Operation

A2 The technical expertise that underpins informed project planning, design and decision making in the area of Electrical Power

A3 Computer aided design and analysis techniques appropriate to Electrical Power, for example the use of software packages such as MATLAB, Simulink, PSpice

A4 A particular topic connected with Electrical Power studied in-depth as part of a research project

Teaching and Learning Methods

Acquisition of A1 to A4 is through a combination of lectures, tutorials, student centred learning, coursework and project work

Assessment Strategy

Formative assessment in particular areas occurs through tutorial exercises (computer based and written) and coursework. The primary means of assessing factual knowledge is through closed book written examination. This is supported through assessed coursework and case studies.

In depth individual learning forms part of the research project, which is assessed by a literature survey, a presentation exercise, dissertation and oral examination.

Intellectual Skills

On completing the programme students should be able to:

B1 Select and apply appropriate methods for modelling and analysing problems in Electrical Power

B2 Use scientific principles in the modelling and analysis of engineering systems, processes and products

B3 Select and apply appropriate methods for developing Electrical Power solutions to practical problems

B4 Produce engineering solutions to problems through the application of knowledge and understanding in Electrical Power

B5 Create new designs in Electrical Power through synthesis of ideas from a wide range of sources

B6 Develop ideas and opinions through the critical appraisal of information from a wide range of sources

Teaching and Learning Methods

Acquisition of B1 to B5 is through a combination of lectures, tutorials, coursework and project work

Assessment Strategy

Intellectual abilities are assessed through a mixture of written examinations and coursework assignments. The research project, which is assessed by dissertation and oral examination, provides evidence of the ability to carry out a research project

Practical Skills

On completing the programme students should be able to:

C1 Use relevant test and measurement equipment

C2 Use software packages relevant to Electrical Power

C3 Plan, execute and report a research project

C4 Design a system or component in selected areas of Electrical Power

C5 Search for and retrieve information from a wide range of sources

Teaching and Learning Methods

Acquisition of C1 to C5 is through a combination of lectures, tutorials, coursework and project work

Assessment Strategy

C1 to C5 are not explicitly assessed but are necessary for successful completion of coursework and project

Transferable/Key Skills

A successful student will be able to:

D1 Communicate effectively

D2 Critically appraise information from a wide range of sources

D3 Create and innovate in problem solving

D4 Use general IT tools such as word processors, spreadsheets

D5 Manage time and resources

Teaching and Learning Methods

D1 to D5 are introduced and developed via a combination of tutorial examples, coursework and project work

Assessment Strategy

Skills D1 to D3 are necessary to complete examinations and assignments to a satisfactory standard
Skills D4 and D5 are essential for satisfactory completion of the project

12 Programme Curriculum, Structure and Features

Basic structure of the programme

The course comprises 90 taught credits, plus 15 credits of laboratory based coursework. MSc students also complete an individual project with dissertation (60 credits) and a group project module (15 credits).

The course is offered once per year in a three semester structure with all lectured material and the research methods module being in semesters 1 and 2. The project will take place in Semester 3.

Key features of the programme

This programme is aimed at students who wish to pursue advanced studies in the area of Electrical Power

Advanced knowledge and understanding (A1 to A3) of specialist topics in Electrical Power are gained primarily through the selected modules. This is reinforced through tutorial exercises and coursework assignments.
Intellectual abilities (B1 to B6) are introduced through the chosen modules and are reinforced through tutorial exercises, coursework assignments. Tutorial exercises and coursework assignments also develop practical skills (C1, C2, C4, C5) and transferable skills (D1 to D5).

The research project involves individual acquisition of knowledge and abilities (A2 to A4, B1 to B5), project planning and execution (C3). Experience is also gained of practical skills (C1 to C5). Satisfactory completion of the dissertation and examination requires command of the transferable skills (D1 to D5).

Programme regulations (link to on-line version)

-R5059F.pdf (ncl.ac.uk)

13 Support for Student Learning

Generic information regarding University provision is available at the following link.
Generic Information

14 Methods for evaluating and improving the quality and standards of teaching and learning

Generic information regarding University provision is available at the following link.
Generic Information

Accreditation reports

Additional mechanisms

15 Regulation of assessment

Generic information regarding University provision is available at the following link.
Generic Information

In addition, information relating to the programme is provided in:

The University Prospectus: https://www.ncl.ac.uk/postgraduate/
Degree Programme and University Regulations: http://www.ncl.ac.uk/regulations/docs/

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.