

Module Outline	Part 1- as validated
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1.	Title	Electrical Power Systems
2.	Level	6
3.	Credits	20
4.	Indicative Student Study Hours	36 hours lectures 164 hours self-directed learning
5.	Core (must take and pass), Compulsory (must take) or Optional	Optional

5. Brief Description of Module (purpose, principal aims and objectives)
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In this transitional period where renewable energy sources are integrated into the existing grid structure, it is important to possess a good understanding of how the traditional electric power system operates and what challenges the addition of renewable energy sources poses. Therefore, this module aims at developing an understanding of the underlying principles of electric power systems and how the integration of renewable energy sources changes the way such systems operate.

The following objectives support this aim:

- Developing an understanding of the traditional system components and how they interact
- Being able to assess transient conditions.
- Simulating load flows in power networks using industry standard software
- Developing the ability to assess the challenges posed by the introduction of renewable energy sources

Module 08H: Electrical Power Systems

Learning Outcomes - On successful completion of this module a student will be able to:

	Subject Specific Learning Outcomes
1	Analyse and evaluate the nature of the changing UK electrical power network.
2	Identify and solve complex problems related to aspects of system design.
3	Analyse system components and interpret power flow and fault levels.
	Generic Learning Outcomes

4	Critically evaluate own learning and development, take responsibility for it, and apply reflection for improvement.
5	Analyse and evaluate ideas and concepts by considering information from a range of perspectives, including ethical considerations.

7. Assessment

Pass on aggregate or Pass all components

(modules can only be pass all components if this is a PSRB requirement)

Pass on aggregates

Summary of Assessment Plan

Type	% Weighting	Anonymous Yes / No	Word Count/ Exam Length	Learning Outcomes Coverage	Comments
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Note: Formative assessments are available during booked tutorial sessions.

1.	Report	60%	Yes	2000 words	LO 1, 2, 4, 5	
2.	Examination	40%	Yes	2 hours	LO 3	

Further Details of Assessment Proposals

Give brief explanation of each assessment activity listed

- The report is based on an analysis of the current and future UK power network formed by generation, distribution and transmission sub-systems and will include an analysis of typical control and protection schemes. It involves internet and literature research, as well as software simulation.
- The exam includes analysis of system components and their interaction under steady state and transient conditions.
- Formative Assessment:

Formative assessments provide you with preliminary guidance, feedback, and feedforward on your proposed submissions. You should aim to book tutorial sessions and send your lecturers any work or areas of concern ahead of the session. This ensures you receive the best guidance possible during your session. Please note, the quality of work sent across will directly influence the quality of feedback received, so ensure the work is detailed and in context.

In addition to tutorial sessions, you will also participate in in-class exercises which constitute part of the formative assessments. These exercises are designed to reinforce the module content and provide immediate feedback on your understanding.

8. Summary of Pre and / or Co Requisite Requirements

Not applicable

9. For use on following programmes

BEng Engineering (Electrical)