University of East Anglia

ACADEMIC PARTNERSHIPS

Module Outline **Part 1- as validated**

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)

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

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

(*Add more lines if required)*

	Specific Learning Outcomes
1.	Analyse and critically 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.	Take responsibility for own learning and academic development using reflection and evaluation
5.	Work with ideas and concepts by evaluating information from a range of perspectives

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
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

1. 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.
2. The exam includes analysis of system components and their interaction under steady state and transient conditions.

8. Summary of Pre and / or Co Requisite Requirements

Not applicable

9. For use on following programmes

BEng Engineering (Electrical)