

**MODULAR PROGRAMME**

**ASSESSMENT SPECIFICATION**

**Module Details**

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| **Module Code**  UFMFDE-15-3 | **Run**  24 Feb | **Module Title**  POWER ELECTRONICS |
| **Module Leader**  Mohammad Mohatram | **Module Tutors**  Mohammad Mohatram | |
| **Component and Element Number**  Component: CW1 | | **Weighting: (% of the Module's assessment)**  50% |
| **Element Description**  Coursework Technical Report | | [**Total Assignment time**](http://fold.cems.uwe.ac.uk:8080/exist/servlet/db/fold1/prod/asstime.xql) |

**Dates**

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| --- | --- |
| **Date Issued to Students** | **Date to be Returned to Students** |
| **Submission Place:** | **Submission Date**   **12/05/2024** |
| **Submission Time**  **4:00 pm** |

**Deliverables**

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| Attached sheet details deliverables.  All reports must be typed. The assessment will be based on:  1) Achieving the aims and objectives.  2) Quality, format, and content of report.  3) Oral explanation on report if required. |

**Module Leader Signature**

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| Mohammad Mohatram |

**COURSEWORK REPORT**

**UFMFDE-15-3**

**Power Electronics**

## Description of Course Work

In this coursework assignment, students are expected to produce a coursework report in which you are required to propose, design, simulation, and analysis of a power electronics subsystem. Thus, this assignment is engineered to provide a mix trend of research and industry. It provides an opportunity for students to:

1. Describe and provide a detailed explanation of the operating principles of power electronic converters.
2. Apply appropriate techniques to the design, analysis, and evaluation of performance of power electronics circuits.
3. Apply modern power electronics usages in terms of Flexible AC Transmission Systems.
4. Design a simulation case study of Power Electronic systems.
5. Research literature from the field and present technical information in a clear and concise manner.

## Coursework Aim

To prepare a technical report detailing the design and simulation of a power electronics subsystem.

## Coursework Objectives

In this coursework students are required to select a project from a given list of topics or you may suggest your own project by discussing and confirming with the module leader. The projects include:

1. An up-to-date literature review of the selected topic. You are required to cite related recently journal and conference papers.
2. Designing a model solution of chosen problem in the selected project. Validating the solution with the help of a software simulation study. The simulation tools and platform are your choice.
3. In your research, you should investigate the effects of risks, such as health and safety, commercial, and security due to mobile communication system.
4. Concluding remarks and future direction of the projected.
5. Demonstration of the project.

1.3.1 Suggested Topics for the Coursework Assignment

* DC to DC Choppers
* AC to DC Converters
* DC to AC Inverters
* AC to AC Regulators
* Switched Mode Power Supplies
* Speed control of DC motor
* Speed control of Induction motor
* Power Electronic Switches
* High Voltage DC Transmission
* Solid-State Circuit Breaker
* Flexible AC Transmission Systems

## Guidance Notes for the Report

The technical report should include an introduction, addressing the objectives, description of the basic operation and characteristics, discussion on the accuracy of your results based on the designed circuit and its associated control circuitries, concluding statements and references. Present some simulation results obtained via software. All calculations must be presented within the report.

Page Limit: 12 A4 Pages (single sided), with a minimum of 11-point font size.

Your report should be in a .pdf format as well as .doc format and should include the cover page as a first page, followed by Turnitin check report (check with library on how to do this or watch the video available on shared folder).

You need to compress all the files into a folder (.zip) and name the folder with your name followed by your UWE ID (example: mohammad\_mohatram\_1805853.zip)

Submit your work on Moodle using the module portal.

Your submission may not be accepted if you do not follow the submission guidelines stated above.

**1.4.1 Marking Criteria**

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|  | Contents | Marks |
| Structure | * Cover page * Lists of Contents * Figures and Tables | 5 |
| * Abstract or Summary * Introduction- Aim and Objectives as well as literature review. | 10 |
| * Main body- Design, sizing of components and calculation | 30 |
| * Simulation Results | 30 |
| * Conclusions * Recommendations for further work * Evaluate the impact of the given topic on an application | 10 |
| * References and cross referencing * Appendices | 5 |
| Report Formalities | * Quality of presentation * Formatting * Page numbers * Use of equation editor (etc) * Graphics * Good use of Office software | 10 |
| Total | | 100 |

**1.4.2 Submission deadlines**

Submission deadline: 4:00 pm Local Oman time on 12/05/2024

**Do not leave submission to the very last minute. Always allow time and plan.**

**Late submissions policy:**

48- Hrs grace time: students are allowed to submit their CW up to 48 hours from the deadline (no form is required). Submissions made after the grace period will not be accepted. For more information on this use the following: [**48 Hours Late Submission Window**](https://www.uwe.ac.uk/study/academic-information/personal-circumstances/late-submission-window)**.**

Good Academic Practice and Assessment Offenses: GCET is fully committed to ensuring that students follow ‘good academic practice’ in the writing/producing and submission of all types of assessments to ensure honesty and integrity in academic practice. Every student is expected to act with integrity in relation to the production and representation of academic work and in acknowledging the contributions of others in their work.

Engaging in any academic breach constituting an assessment offense such as collusion, plagiarism, Fabrication or Misrepresentation, contractual cheating. will be investigated and could lead to penalties under the [**UWE Assessment Offences Policy**](https://www.uwe.ac.uk/study/academic-information/assessments/assessment-offences)**.**

**1.4.3 Assessment**

All reports must be typed. The assessment will be based on

1) Achieving the aims and objectives.

2) Quality, format, and content of report.

3) Oral explanation on report, if required.

If you have any query regarding your project, please talk to your module tutor or otherwise send me an email at: [m.mohatram@gcet.edu.om](mailto:m.mohatram@gcet.edu.om)