

# Master of Engineering Practice M1330 (Smart and Renewable Electrical Power Systems Engineering)

**Academic Chair:** Dr. Martina Calais ([M.Calais@murdoch.edu.au](mailto:M.Calais@murdoch.edu.au))

**Start Date:**

Semester 1 2025

**Major:** Smart and Renewable Electrical Power Systems Engineering

**Option:** Engineering Design (recommended for international students)

| Year 1 – 2025 | Semester 1 Units   | CP | Semester 2 Units  | CP |
|---------------|--|----|---|----|
|               | ENG532 Renewable Energy Resources and Technologies                     | 3  | ENG534 Power Systems Operation, Control and Protection    | 3  |
|               | ENG536 Electrical Machines in the Smart Grid era                       | 3  | ENG544 Engineering Sustainability                         | 3  |
|               | ENG537 Power System Modelling and Analysis                             | 3  | ENG543 Modelling and Systems Engineering                  | 3  |
|               | ENG526 Postgraduate Engineering Skills and Tools                       | 3  | ICT515 Foundations of Data Science                        | 3  |
|               | <b>Total</b>   | 12 | <b>Total</b>  | 12 |
| Year 2 - 2026 | Semester 1 Units   | CP | Semester 2 Units  | CP |
|               | ENG535 Power Electronics – Converters and Applications                 | 3  | Specified Elective or <b>GRD503 Design Thinking Tools</b> | 3  |
|               | ENG631 Distributed Power System and Microgrid Planning and Reliability | 3  | ENG538 Future Electricity Networks                        | 3  |
|               | <b>GRD503 Design Thinking Tools</b> or Specified Elective              | 3  | <b>ENG605 Design Project</b>                              | 6  |
|               | ENG500 Finance, Management, Ethics and Law                             | 3  | ENG100 Engineering Professional Practice                  | 0  |
|               | <b>Total</b>   | 12 | <b>Total</b>  | 12 |

**TOTAL CREDIT POINTS 48**

## Recommended Specified Electives

ENG553 Industrial Process Control (S1)  
 ENG552 Industrial Control Systems (S1)  
 ENG551 Microcontrollers and Data Communication (S1)  
 ENG570 Circular Economy and Innovation (S1)  
 ENG630 Hydrogen Systems (S2)  
 ICT606 Machine Learning (S1)  
 PEN504 Greenhouse Gas Reporting and Life Cycle Assessment (S2)  
 PEN594 Energy Auditing and Management (S1)  
 PEN600 Energy Storage (S2)  
 ENG526 Postgraduate Engineering Skills and Tools (S1, S2)  
 (Any other elective units are subject to approval from the Academic Chair)

**Please note:** This course plan is a sample only and must be read in conjunction with the full course structure, unit prerequisites and enrolment options as outlined in the [Handbook](#). Students should note that due to unit prerequisites, commencing study in Semester 2 may extend the duration of the course. This information is correct as at 26/11/24.

# Master of Engineering Practice M1330 (Smart and Renewable Electrical Power Systems Engineering)

**Academic Chair:** Dr. Martina Calais ([M.Calais@murdoch.edu.au](mailto:M.Calais@murdoch.edu.au))

**Start Date:**

Semester 1 2025

**Major:** Smart and Renewable Electrical Power Systems Engineering

**Option:** Engineering Research (only available to students who can demonstrate an average 70% or greater WAM equivalent (2.8 GPA equivalent) during their first 24 cpts of study in the Master of Engineering Practice course, or alternatively can enrol with permission from the Academic Chair.)

| Year 1 – 2025 | Semester 1 Units   | CP | Semester 2 Units                                       | CP |
|---------------|--|----|--|----|
|               | ENG532 Renewable Energy Resources and Technologies                     | 3  | ENG534 Power Systems Operation, Control and Protection | 3  |
|               | ENG536 Electrical Machines in the Smart Grid era                       | 3  | ENG544 Engineering Sustainability                      | 3  |
|               | ENG537 Power System Modelling and Analysis                             | 3  | ENG543 Modelling and Systems Engineering               | 3  |
|               | ENG526 Postgraduate Engineering Skills and Tools (Specified Elective)  | 3  | ICT515 Foundations of Data Science                     | 3  |
|               | <b>Total</b>   | 12 | <b>Total</b>   | 12 |
| Year 2 - 2026 | Semester 1 Units   | CP | Semester 2 Units                                       | CP |
|               | ENG535 Power Electronics – Converters and Applications                 | 3  | ENG538 Future Electricity Networks                     | 3  |
|               | ENG631 Distributed Power System and Microgrid Planning and Reliability | 3  | <b>ENG606 Engineering Thesis</b>                       | 9  |
|               | ENG500 Finance, Management, Ethics and Law                             | 3  | ENG100 Engineering Professional Practice (Y option)    | 0  |
|               | <b>ENG606 Engineering Thesis (Y option)</b>                            | 3  |  |    |
|               | ENG100 Engineering Professional Practice (Y option)                    | 0  |  |    |
|               | <b>Total</b>   | 12 | <b>Total</b>   | 12 |