Department of Mathematical Sciences  
Faculty of Science and Health  
PhD Students

Postgraduate Research milestones are used to ensure students are making sufficient progress during their studies, and to provide a supportive framework to guide students through the various stages of their research. The Milestones should also help to keep students on track to submit within the appropriate period. PGR supervisors should talk through the relevant milestones during supervisory meetings and they should be referred to on a regular basis.

Supervisory Panels and Research Students’ Progress Boards will use the milestones to reflect on the level of progress being made, ahead of making a recommendation. Whilst the milestones are specific for each department and type of course, it is recognised that every research journey is different, and that whilst the milestones provide an overarching framework of expectations, a degree of flexibility should be given, based on the trajectory and scope of research.

Students and supervisors are encouraged to supplement these milestones with individual research plans which take into account the specifics of an individual research project and the individual circumstances of the PGR student.

### Year 1 (Full time)  
Year 1 and 2 (Part time)

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<tr>
<th>Milestone</th>
<th>Requirement</th>
<th>Term to undertake work</th>
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</table>
| M1.1          | Assess training needs and knowledge required to undertake research project and complete the thesis.  
|               | - Training Needs Analysis to be completed.  
|               | - Add “Attend Proficio (internal) / MAGIC/APTS (external) courses and plan for further courses to attend, as appropriate.  
|               | Choose/narrow down the research topic and demonstrate significance/impact of research.  
|               | It is recommended to take total 100 hours of modules from MAGIC/APTS/Coursera/our own PG modules throughout PhD course, ideally in Year 1.  
|               | - Link to MAGIC modules: https://maths-magic.ac.uk/courses  
|               | - Link to APTS modules: https://warwick.ac.uk/fac/sci/statistics/apts/students/resources  
|               | - Link to Coursera modules: https://gb.coursera.org/  
|               | - Link to our own PG modules: https://www1.essex.ac.uk/modules/modules.aspx?department=MA&filter=PG&year=22&campus=CO&level=&zs=true | FT 1-3  PT 1-3 |

### Ahead of the second Supervisory Panel
### M1.2 Research Project Proposal, including (dependent on subject area):
- Write central research problem/questions to be answered.
- Methodological considerations.
- Feasibility Report – identifying sources, access and ethical considerations
- Create project plan, outlining objectives for each stage.

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</table>
| M2.1      | Review training needs and knowledge required to continue with research project and complete the thesis.  
- Training Needs Analysis to be reviewed. | FT 6  PT 9 |
| M2.2      | Demonstrate understanding of chosen topic within the context of the field.  
- Critical Literature Review (where relevant) | FT 6  PT 9 |
| M2.3      | Demonstrate the ability to produce work of the quality and quantity in order to complete within the standard period.  
- Evidence that academic writing is of standard and ability expected at PhD level, including adequate referencing and language skills.  
- Clearly identify the major research questions which have not been addressed by others  
- Confirm that adequate resources for completion of the thesis are available | FT 6  PT 9 |
| M2.4      | Subject-specific milestones  
Students must have gained an in-depth understanding of their chosen field of study. They must have made significant progress on experimental or theoretical work proposed, with some early results. Students should demonstrate an ability to analyse in depth, and critically evaluate, key published work.  
- Full progress report (8 - 10,000 words in most cases, but a shorter report accompanied by a clear summary of relevant results /work may be acceptable [with the supervisor’s approval]  
- If appropriate, evidence of the draft of a first journal, workshop, symposium, or conference paper is desirable. | FT 6  PT 9 |
## Ahead of the fourth Supervisory Panel

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| M2.5      | Review training needs and knowledge required to continue with research project and complete the thesis.  
- Attend Proficio courses and plan for further courses to attend, as appropriate. | 5 | 10 |
| M2.6      | Demonstrate work of the quality and quantity expected at the end of Year 2  
- Produce 2 draft chapters  
- Report on research undertaken to date | 6 | 11 |
| M2.7      |  
- Demonstration of effective project management through the setting of research goals and prioritisation of activities.  
- Create a detailed, realistic plan of work/timetable for Year 3.  
- Produce supervisory panel report written in a clear and self-reflective style | 6 | 12 |
| M2.8      |  
- Subject-specific milestones  
- Half of experimental or theoretical work should be essentially completed. Further publications or plans for publications  
- If possible, submission of first journal, workshop, symposium, or conference paper. | 6 | 12 |

The Supervisory Panel will make a recommendation to the Research Student Progress Board, ahead of the next academic year. Further information regarding Supervisory Panels and Research Student Progress Boards can be found here: https://www.essex.ac.uk/student/postgraduate-research/pgr-progress

## Year 3 (Full time)

### Year 5 and 6 (Part time)

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| Ahead of the fifth Supervisory Panel | Ability to reflect on skills and knowledge development and its application to the research project  
- Training Needs Analysis reviewed  
- Attend Proficio courses and plan for further courses to attend, as appropriate. | FT | 7 | PT | 13 |
| M3.1      | Demonstrate work of the quality and quantity expected at the end of Year 2  
- Produce draft of all core chapters  
- Report on research undertaken to | 7 | 14 |
| M3.2      | Review significance and impact of research and articulate output.  
For example:  
- Deliver workshop  
- Present research to students and staff at seminars/conferences | 7 | 15 |
| M3.3      | Key experimental or theoretical work should be essentially completed. Further publications or plans for publications should have been agreed.  
- Review publication(s) so far and plan further ones if enough unpublished results have been produced. | 7 | 15 |
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| C1.1      | Clear plan to submission:  
• Submission date agreed  
• Detailed schedule to submission | Timeline agreed by Supervisory panel. |

**Ahead of the sixth Supervisory Panel**

|   |  
|---|---|
| M3.5 | Demonstrate work of the quality and quantity expected when nearing submission  
• Research completed (experimental, empirical and theoretical work, where relevant) | 9 | 16 |
| M3.6 | Clear evidence of progress towards submission  
• Completed final draft of thesis for supervisor(s)/ supervisory panel comment | 9 | 18 |
| M3.7 | Review publication(s) so far and plan further ones if enough unpublished results have been produced. | 9 | 18 |

The Supervisory Panel will either confirm to the Research Student Progress Board that the student is ready to submit their thesis, or recommend that a period of completion is required (see below).

**Completion Period**

If, at the 6th supervisory Panel, a student isn’t on track to submit their thesis by the end of year 3 (year 6 for Part time students), a recommendation for a period of completion can be requested from the RSPB, for approval by the Faculty Dean (Postgraduate).