PRIFYSGOL BANGOR UNIVERSITY

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College of Environmental Sciences and Engineering

Master of Science by Research (MScRes) handbook

2019-20

@COESEpostgrads

Blackboard learn+ *CoESE Postgraduate Research*
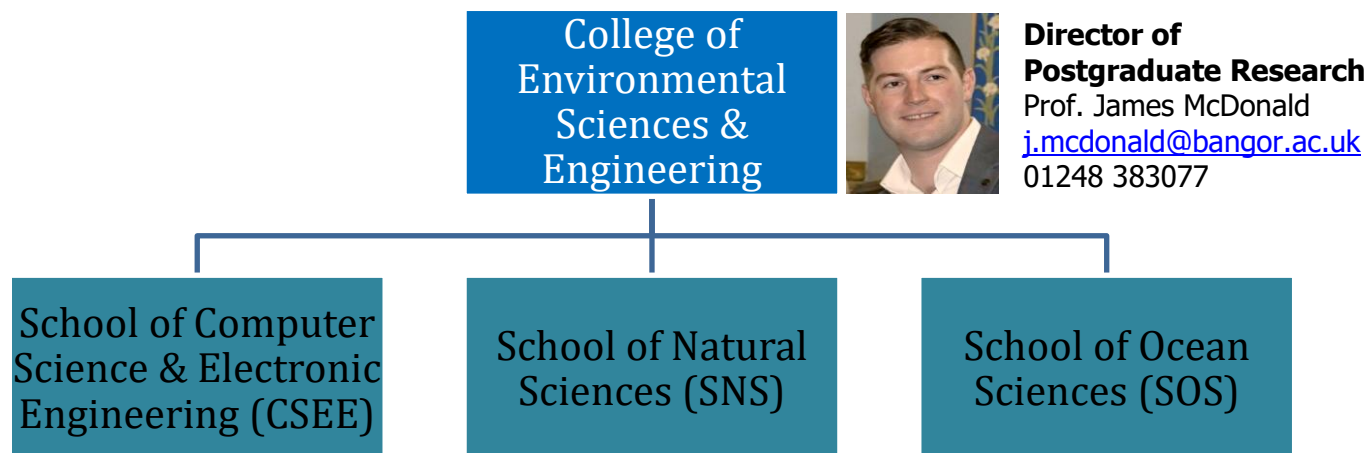
1. Table of Contents

Introduction

The Master of Science by Research (MScRes) degree is a one-year full-time (or pro-rata part-time) research programme that differs from a taught Masters programme by placing more emphasis on research, and by being examined much more like a PhD, by submission of a thesis, and if necessary, a viva voce (oral) examination, rather than by grading of coursework and the dissertation. This degree will equip you with confidence and competence in the latest research skills (including generic skills such as literature searching, legal and ethical aspects, project planning and grant proposal writing) and allow you to apply for further research training (PhD) programmes, or to directly apply for research positions in universities or research institutes.

In the first three months candidates refine their project ideas and subject knowledge by preparing a project proposal and conducting a thorough literature review. You will also present your proposal to the rest of the cohort and supervisors, and produce a research profile on the University website. Feedback obtained will enable you to improve the final project and thesis. You will also be expected to take advantage of the training programmes provided by the College of Environmental Sciences and Engineering and the University Doctoral School in both subject- specific and generic postgraduate-level skills.

2. School and College academic staff contacts

College of Environmental Sciences & Engineering

Director of Postgraduate Research
Prof. James McDonald
j.mcdonald@bangor.ac.uk
01248 383077

School of Computer Science & Electronic Engineering (CSEE)

School of Natural Sciences (SNS)

School of Ocean Sciences (SOS)

PGR lead for CSEE
Dr. Bill Teahan
w.j.teahan@bangor.ac.uk
01248 382703

PGR lead for SNS (Biology/Zoology)
Dr. Nathalie Fenner
n.fenner@bangor.ac.uk
01248 382507

PGR lead for SOS
Dr. Line Cordes
l.cordes@bangor.ac.uk
01248 383503

Your School PGR lead is your main contact point for PGR enquiries, and can be contacted via the details provided.

PGR lead for SNS (Environment)
Dr. Neal Hockley
n.hockley@bangor.ac.uk
01248 382769

PGR lead for SNS (Chemistry)
Dr. Martina Lahmann
m.lahmann@bangor.ac.uk
01248 382390

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3. Postgraduate Administrators

Ms. Christine Parry: Student Administration Officer PGR
Ground floor Wheldon Building
Phone: 01248 382314
E-mail: sciencesite.pgr@bangor.ac.uk

4. Doctoral School Staff

Dean of Postgraduate Research
Prof. John Turner
Room: 403 Westbury Mount / First Floor, Main Arts Building
Phone: 01248 382881
E-mail: j.turner@bangor.ac.uk

Doctoral School Manager / KESS2 Manager
Dr. Penny Dowdney
Room: First Floor, Main Arts Building
Phone: 01248 382266
E-mail: p.j.dowdney@bangor.ac.uk

Doctoral School Administrator
Aashu Jayadeep
Room: First Floor, Main Arts Building
Phone: 01248 382357
E-mail: a.jayadeep@bangor.ac.uk

5. The role and responsibilities of the supervisors

Resources to assist with promoting effective supervisory relationship and project management can be found on pages in Appendix 1 & 2 of this document, and electronic versions of these documents are available under the 'Resources' tab on the *CoESE Postgraduate Research* Blackboard site.

Supervisory teams must have subject expertise and the skills and experience to monitor and support Postgraduate Research Candidates. A Postgraduate Research Candidate must have regular contact with the Supervisor(s) to assess progress. The Principal Supervisor decides how often Supervisors meet the candidate, taking into account the research topic and the needs of the candidate.

Supervisors must meet their Postgraduate Research Candidates at least once every two weeks. Where a meeting cannot be arranged, an alternative contact method must be used in its place. The meetings, and all other alternative contact points, must enable the Principal Supervisor to confirm that the candidate is committed to the programme of study. Each meeting/contact point must be recorded, as required by the University's Attendance Monitoring Policy. The responsibilities of the Supervisor(s) are to:

- Participate in the selection of Postgraduate Research Candidates for research projects in their area of expertise.
- Know the requirements of funder/sponsor.
- Confirm that the candidate has received University and College/School documents relevant to their research.
- Make sure that the candidate has access to facilities and resources required for the research work and to identify ways to support disclosed disability.
- Help define and plan the research project
- Give guidance on the nature of research and the standard expected.
- Give guidance on research methods, techniques, data collection and data storage
- Give guidance on Intellectual Property, research integrity and avoidance of plagiarism.
- Give guidance about published literature and other sources of information
- Give advice, where relevant, on procedures to obtain ethical or other approval
- Make sure that risk assessments are completed and that the candidate is informed about relevant Health and Safety procedures.
- Give advice on training for research and general skills
- Explain the roles of the Supervisory team members as appropriate.
- Provide pastoral support and refer to other sources of support eg. Personal Tutor and Student Services and check that other support used is effective
- Liaise with Co-supervisors, External Supervisors, and Personal Tutor as appropriate.
- Make sure that the candidate is informed if the standard of work is below that generally expected.
- Explain arrangements for Progress Reviews and the role of the Review Committee.
- Maintain contact with the candidate through regular formal recorded meetings
- Be accessible to the candidate at other appropriate times
- Give advice on completion dates for each stage of the work
- Return written work with constructive criticism and in reasonable time
- Arrange, where appropriate, for the candidate to talk about their work, including at internal seminars and conferences.

- Oversee any arrangements for the candidate to attend conferences or conduct work away from Bangor, including, where appropriate, arranging agreements with the hosting organisation.
- Provide progress reports to external sponsors.
- Provide guidance on suspension/interruption of study and extension requests.
- Make sure that the candidate understands the requirements of the examination process and viva voce
- Provide advice on the selection of an appropriate external examiner.
- Provide advice on the timing of submission, contents and format of the thesis.
- Encourage and mentor publication and grant writing.
- Provide career guidance and support where appropriate and provide references.
- It is **_not_** the role of the Supervisor to examine the thesis
- Some of the Supervisor's roles may be assigned to designated individuals within Colleges and/or Schools.

For full details, please refer to section 4.4 of the [PGR Regulations 03](#)

6. Sources of information for MScRes candidates and staff

Further information about the MScRes degree can be found on the '[CoESE Postgraduate Research](#)´ BlackBoard Site. The site provides information for both postgraduate researchers, supervisors and academic staff on the following topics:

- Information and recordings from the CoESE and Doctoral School inductions
- Links to the main sources of information for PGRs and staff.
  - o PGR regulations
  - o Doctoral School Website
  - o Thesis submission guidelines
  - o Example theses and assignments
- Information on training courses and training needs analysis forms.
- Details of PGR assignments and deadlines.
- Links for electronic submission of assignments and your thesis.
- Minutes of the CoESE Postgraduate Research committee.
- Postgraduate Research Experience Survey results and 'PRES Action Plans'
- Links to PGR support services

'*CoESE Postgraduate Research*´ Blackboard site
https://blackboard.bangor.ac.uk/ultra/courses/_107041_1/cl/outline

Doctoral School website
https://www.bangor.ac.uk/doctoral-school/

myBangor: postgraduate handbook
https://my.bangor.ac.uk/index.php.en

If you do not find the information you require, please contact your School Postgraduate Lead or the PGR admin staff (sciencesite.pgr@bangor.ac.uk)

7. MScRes degree timeline and key milestones

1 Year Registration period – key milestones*

*assuming an October start on a full-time mode of study – if you commence at another stage of the year, please adjust the timescale accordingly.

*Part-Time MScRes candidates should still hold a review meeting annually, but timescales for assignment completion can be doubled if needed (e.g. 1 year for the literature review, 6 months for the online web profile, 2 months for the training needs analysis form, and completion of the project presentation in the second year of registration).

NOTE: it is expected that completion of your research project and thesis writing will take place in parallel with the milestones listed below.

October:
- Registration and Postgraduate researcher inductions.
- Postgraduate assignments set:
    1. Literature review and project plan (to be completed *by your review meeting*: 4-6 months after start).
    2. Training needs analysis (complete *within the first month* of your degree).
    3. Create an online web profile on PURE (complete *within the first three months* of your degree).
    4. Project presentation (December: details below).

December:
- MScRes project presentations (Fri 6th Dec 2019 – details will be sent via E-mail closer to the time)

January:
- MScRes review process opens: MScRes researcher and supervisor complete online forms (information will be sent to you by E-mail when the process commences)

March:
- All assignments (listed above) should be completed before your review meeting.
- All MScRes reviews to be completed by the end of March.
- Your review committee will be asked to confirm that you have completed your PGR assignments.

September:
- *Registration period ends* at the end of September.
- Thesis submission.

Guidance on how to format your thesis can be found in the PGR regulations:
https://www.bangor.ac.uk/regulations/regulations/reg03.php.en

Guidance on how to submit your thesis can be found on the *CoESE Postgraduate research* Blackboard site:
https://blackboard.bangor.ac.uk/ultra/courses/_107041_1/cl/outline

Write-up period (one year for full time candidates).

The final deadline for thesis submission is two years after initial registration (for full time MScRes candidates).

However, we strongly encourage you to write as much of your thesis as possible during the registration period (year 1) and aim to submit your thesis at the end of your registration period, or as early as possible in the write-up period.

For further details on the review process and your degree programme, please refer to the PGR regulations:
https://www.bangor.ac.uk/regulations/regulations/reg03.php.en

8. Training and development

Training and development opportunities are provided through the CoESE and the Doctoral School training and development programmes. You may also want to apply for external training opportunities relevant to your field of research.

At the outset of their degree, every postgraduate researcher must complete a **Training needs analysis (TNA)** (see Appendix 3) with their supervisors and use this document to discuss their individual training needs at the start of their PGR degree. Training needs should then be revisited throughout the degree.

The CoESE PGR training programme for 2019-2020 can be found in section 16.

In addition to the CoESE training courses, the Doctoral School also provide a wide range of training and development events that can be viewed here:
https://www.bangor.ac.uk/doctoral-school/documents/ForPGRInduction201920_000.pdf

9. Assignments and deadlines

There are four assignment to complete. These are formative assignments (i.e. not graded) but will help to improve your research skills, and ultimately, the quality of your research.

The assignments will enable you to: (1) Identify flaws with experimental design at an early stage. (2) Allow you to formulate worthwhile hypotheses. (3) Ensure your project will stay within budgetary limits (4) Provide practise at writing proposals and manuscripts (5) Provide evidence of progress at your review meeting (6) Get one major chapter (introduction) of your thesis written.

Assignment	Deadline
1. Literature review & project plan	To be completed *by your review meeting* (4-6 months after start)
2. Training Needs Analysis (TNA)	End of October 2019 (or within the *first month* of your start date)
3. Create an online web profile on PURE	End of December 2019 (within the *first three months* of your degree)
4. Project presentation	Friday 6th December 2019

Some basic guidance on the content of these assignments is provided on the CoESE Postgraduate Research Blackboard Site. However, please discuss the required content for your specific project with your supervisor and follow their specific guidance on how to prepare your assignments.

Further details on assignments and deadlines can be accessed via the 'CoESE PGR induction' and 'Assignments' tabs on the *CoESE Postgraduate Research* BlackBoard site.

The presentation slides from the 'First steps in your MScRes degree' session as part of your induction contain on overview of the assignments and are also provided in Appendix 2 of this document.

10.   Annual progress review

Each postgraduate research candidate is monitored by a Review Committee consisting of a Chair, who is independent of the supervisory team, Principal Supervisor and Co-supervisor(s) and one other member of academic staff who is independent of the supervisory team (the Internal member of the Review Committee). An external member may also be appointed if required. The School's Lead for Postgraduate Research Postgraduate Research oversees the membership of Review Committees. Review Committees must meet at least once a year. The first review of progress must be completed and reported within the first 4-6 months using the online Postgraduate Review System (PGRS), in which the candidate and Principal Supervisor complete on line forms reporting their assessment of progress. Once submitted, the Chair arranges a Review Committee meeting in which the candidate makes a presentation on their research project and responds to questions from the committee. The questioning is led by the Internal committee member but can involve all those present. The Review Committee will agree an action plan for future work with the candidate and make an overall assessment of progress. The Chair is responsible for reporting the agreed outcome of the Review meeting in the Postgraduate Review System (PGRS), and Candidate, Principal Supervisor, and Internal are asked to agree or comment on the report. If the outcome of the annual Review Committee reports unsatisfactory progress, then a further Review Committee should be arranged within 3 months to assess progress against the goals set by the agreed action plan. In exceptional circumstances where the outcome of the Review Committee report cannot be agreed by all participants, the School Lead of Postgraduate Research can finalise the report in PGRS.

For MScRes candidates, the Chair of the committee may approve progress without the requirement to hold a review committee meeting if all parties are happy with this arrangement and it is clear from both the candidate and supervisor's reports that strong progress is being made. In this instance, the Chair must still ensure that all relevant stages of the online Postgraduate Review System are completed in order to sign off the review process.

The Review Committee:

- Approves the proposed research.
- Makes sure that proper supervision is in place.
- Approves a replacement principal supervisor and/or co-supervisor as required.
- Makes sure that the candidate has access to the resources required for the project.
- Monitors the candidate's progress, including participation in training courses and other activities that enhance employability.

11.   Personal Tutors

Each postgraduate research candidate will have a Personal Tutor, who is independent of their supervisory team, and independent of their examiners. You will be allocated a personal tutor at the start of your PGR degree and we recommend that you arrange to meet with your personal tutor early on in your degree. A candidate can request a change of Personal Tutor at any stage. The personal tutor will also be the Chair of your progress review and thesis examination board.

12. Criteria for awarding a Master of Science by Research degree

The Master of Science by Research is a Level 7 degree. The research must be (a) a substantive evaluation and analysis of a body of knowledge and/or (b) an original research project. According to the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (2008), postgraduate research candidates must show, for a specified field of study or area of professional practice:

i.   A systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study or area of professional practice.

ii. A comprehensive understanding of techniques applicable to their own research or advanced scholarship.

iii. Originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline.

iv. Conceptual understanding that enables the candidate to:
  - Evaluate critically current research and advanced scholarship in the discipline.
  - Evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.

13. Assessment procedure and guidance on thesis format

Students must submit a **_thesis_** for examination. The thesis should not normally exceed 50,000 words for a MScRes. The Examining Board will assess the thesis and **_may_** be required to conduct an **_oral examination_** (*viva voce*) of each student. **However, Examination Boards for the Master by Research degrees may agree that an oral examination is not necessary where the internal and external preliminary examination reports indicate that there are no conditions or only minor corrections are required.**

For full details, please refer to section 6 of the PGR Regulations 03

14. Presentation of the thesis

MScRes students can submit a thesis, at the earliest, 2 months before the final registration, and no later than two years after the initial registration date (for a full-time degree). The thesis must not exceed 50,000 words for an MScRes – but this is a limit, not a target!

Theses must also include:
  - An abstract not exceeding 600 words
  - A review of literature relevant to the work conducted by the candidate.
  - A description of the methods used by the candidate to conduct the research.
  - A description of the results and discussions and conclusions of the research.

- A bibliography of sources quoted or referenced in the thesis.

These elements (abstract, literature review, objectives, methods, results, discussions, conclusions and references) must be presented and may include one or more of the following:

- Separate sections/chapters.
- Papers ready to be submitted to an academic journal.
- Works already published.

If works completed with other authors are included in the thesis, the candidate's contribution to these works must be defined in the introduction. Candidates must check whether permission is required from the publishers of any published works. A bar on access for any content which is not yet published cab be requested – please refer to the PGR Regulations 03 *for more details.*

Theses must be submitted as a soft bound volume and an electronic copy must also be submitted via the 'Thesis Submission' tab of the '*CoESE Postgraduate Research*' Blackboard Site. The soft bound volume must:

- Be sufficiently secure to withstand transit to and from the examiners.
- Have, on the outside cover, the student's name and the title of the postgraduate research programme.

Presentation, production and format

Theses must be presented on good quality A4 paper. Page margins must not be less than 2cm and must be no greater than 3cm. Serif fonts (e.g. Times-Roman, Bookman) or Sans-serif fonts (e.g. Arial Helvetica, Verdana, Tahoma) or their equivalents must be used. In the main body of the text, Serif fonts should not be smaller than 12-point. For Sans-serif fonts, the font size should not be smaller than 10-point. Characters in other texts (notes, footnotes etc) must be not less than 10-point for Serif fonts and 8-points for Sans-serif fonts. All printed pages must be of even quality with clear black characters suitable for scanning/photocopying. A 1 ½ line spacing must be used in the main text, but single line spacing can be used in the summary and in any indented quotations and footnotes. Colour printing can be used for charts, diagrams and photographs, but students must make sure that all material can be photocopied. You must also sign a declaration inside each thesis; please refer to section 66 of the PGR Regulations 03 for more information.

Recommended sequence of material

In a typical single-volume thesis, material should be arranged in the following sequence:
Title page
Title and subtitle
Summary
Contents
List of tables, illustrations etc.
List of accompanying material
Preface
Acknowledgements
Author's declaration
Definitions
Text, divided into chapters, sections, etc.
Appendices
Glossary
List of references
Bibliography

Index
This is the convention in most disciplines. However, before writing the thesis, the student should consult the supervisor for advice.

Further details on preparation and submission of the thesis can be found in the PGR Regulations 03

15.   Guidelines on submitting your thesis

The following information is taken from the 'Thesis Submission' tab on the *CoESE Postgraduate Research BlackBoard site*. Please visit the Blackboard site for the most up to date information, and to access the links.

External Examiner (EE) in place? EE Nomination form to be completed by supervisor **AT LEAST ONE MONTH BEFORE SUBMISSION DATE**, signed by PGR lead on behalf of the Head of School, and sent to Sarah Jackson, Quality Assurance and Validation Unit for approval.

PLEASE ENSURE A COPY OF THE EE NOMINATION FORM IS FORWARDED TO THE SCIENCE SITE ADMIN CENTRE (sciencesite.pgr@bangor.ac.uk**), WHELDON BUILDING.**
Link to nomination form: http://www.bangor.ac.uk/ar/main/quality/ext_exam_gr.php.en

2. Complete the on-line Final Award Check. You will be sent an email before your submission date with the following Final Award Check link:
https://apps.bangor.ac.uk/student/sd1/

3.   The web link for information on Submission of Thesis:

Regulations for Postgraduate Research Programmes - Presentation of the Thesis.
   https://www.bangor.ac.uk/regulations/regulations/reg03.php.en
   Note NEW REGULATION: When preparing your thesis for submission "Double-sided printing must normally be used".

4.   Link on how to access the Bangor University Online Student Handbook.
http://www.bangor.ac.uk/ar/main/publications/handbooks.php.en

5.   For the purpose of examination, a candidate shall submit the following to the Science Site Admin Centre, Ground Floor, Wheldon Building:

(i) First Submission
      THREE typed soft bound copies of the thesis, each of which shall contain a signed Declaration sheet (3 pages, see link below), bound into the thesis after the title page. You are required to upload your thesis to TURNITIN via the **CoESE Research Postgraduates** Blackboard site. If you don't have a BAR ON ACCESS please delete this section on the Statement page before printing.
http://www.bangor.ac.uk/ar/main/publications/forms.php.en
Select: **Postgraduate Specific Forms** - Declaration Form (Research dissertations)

(ii) Final Submission

PGRs are required to submit their final thesis electronically via PURE. Information on how to do this can be found at –
https://www.bangor.ac.uk/doctoral-school/current-staff-and-students.php.en

Do not submit your thesis until your corrections have been approved by either your Internal Examiner (3 months for corrections) or External Examiner (6 months for corrections).

The University's Doctoral School offers Training and Development sessions to help students prepare for viva examination. Details of the training available can be found at –
https://www.bangor.ac.uk/doctoral-school/training.php.en

16.   CoESE Postgraduate Researcher Training Courses 2019-2020

In addition to the CoESE training courses listed below, the Doctoral School also provide a wide range of training and development events that can be viewed here: https://www.bangor.ac.uk/doctoral-school/documents/ForPGRInduction201920_000.pdf

Course Title	**Introduction to Programming (ICE-4101)**
Duration	From 23rd September, 2019 for 12 weeks
Staff member	Dr. Bill Teahan
Time/Date/Venue	Lecture: 16:00 to 17:30, Thursdays in DS 211; Laboratory: 12:00 to 14:00, Fridays in DS 319
Description	Introduction to Programming in Python
Number of places	30 maximum
Other information	Please contact Dr. Bill Teahan (w.j.teahan@bangor.ac.uk) for details https://www.bangor.ac.uk/courses/postgraduate-modules/ICE-4101

Course Title	**Introduction to Matlab**
Duration	Sept 2019 - 7 × 2-hour practicals, plus two assignments
Staff member	Dr Peter Robins
Time/Date/Venue	AD_035 (Please email p.robins@bangor.ac.uk for timetable)
Description	Introduction to Matlab programming and data analysis
Number of places	Limited – Please email p.robins@bangor.ac.uk
Other information	

Course Title	**College of Environmental Sciences and Engineering Welcome Meeting**
Duration	2 hours
Staff member	Prof. James McDonald (j.mcdonald@bangor.ac.uk)
Time/Date/Venue	11:00-13:00 30/09/19 Wheldon Lecture Theatre 1, Wheldon Building.
Description	Find out who's who in the College of Environmental Sciences and Engineering, plus presentations from the Student's Union and Postgraduate Researchers' Official society (PROs).
Number of places	Unlimited
Other information	No booking required - Compulsory for all new postgraduate researchers

Course Title	**PhD researcher induction – First steps in your PhD**
Duration	3 hours
Staff member	09:30-12:30 01/10/19 Ground floor seminar room, Environment Centre Wales
Time/Date/Venue	Prof. James McDonald (j.mcdonald@bangor.ac.uk)
Description	This session will cover important information and activities related to your research degree, including assignments, monitoring and progression & examination procedures.
Number of places	40
Other information	No booking required - Compulsory for all new PhD researchers. Current PhD candidates are also welcome to attend.

Course Title	**MScRes induction – First steps in your MScRes degree**
Duration	3 hours
Staff member	13:30-16:30 01/10/19 Ground floor seminar room, Environment Centre Wales
Time/Date/Venue	Prof. James McDonald (j.mcdonald@bangor.ac.uk)

Description	*This session will cover important information and activities related to your research degree, including assignments, monitoring and progression & examination procedures.*
Number of places	40
Other information	No booking required - Compulsory for all new MScRes researchers. Current MScRes candidates are also welcome to attend.

Course Title	**Doctoral School Induction for new Research Students**
Duration	5 hours
Staff member	Dr. Penny Dowdney, Prof. John Turner and others.
Time/Date/Venue	09:00-14:00 02/10/19 Cledwyn Room 3, Main University Building
Description	It will be a perfect opportunity for new doctoral students to meet one another. We have put together a programme to include information from the Doctoral School, the Library and Student Services, you will have the opportunity to meet the faces behind the e-mails. We have also invited some supervisors and students to contribute to the day. If you intend to come to the induction event please register online (https://www.bangor.ac.uk/doctoral-school/workshops/programme/induction-event-for-new-postgraduate-researchers-41134) or contact **pgr@bangor.ac.uk**
Number of places	50
Other information	No booking required - Compulsory for all new postgraduate researchers

Course Title	**Information searching and data management**
Duration	2 hours
Staff member	Dr. Beth Hall
Time/Date/Venue	13:00-15:00 03/10/19 Powys Hall, Main University Building (Main Arts)
Description	This session is in two parts. The first session will cover key skills required to conduct effective literature searches, manage your references and evaluate information. It will also introduce you to the resources available via the Library and Archives Service. The second session will cover the best practice principles of research data management. I will recommend strategies to help you manage the digital information you will create, receive or collect during your time at Bangor.
Number of places	50
Other information	No booking required - Compulsory for all new postgraduate researchers

Course Title	**Teaching for Postgraduates**
Duration	3 hours
Staff member	Dr. Rosanna Robinson (r.l.robinson@bangor.ac.uk)
Time/Date/Venue	10:00-12:00 03/10/19 Powys Hall, Main University Building (Main Arts)
Description	This workshop will provide information on teaching approaches for postgraduate demonstrators and the PGCertHE programme at Bangor University. This is an optional workshop for MScRes, MPhil or PhD researchers. However, only PGRs that have taken this workshop will be eligible to demonstrate in undergraduate classes.
Number of places	50
Other information	No booking required

Course Title	**Health, safety and introduction to ethics for MScRes candidates**
Duration	1 day

Staff member	Dr. John Latchford
Time/Date/Venue	10:00-16:00, Tue 22nd October 2019, ECW ground floor seminar room
Description	An introduction to Health and safety and ethics in PGR research. ***This course is compulsory for all new MScRes candidates.*** Contact Dr. John Latchford (j.w.latchford@bangor.ac.uk) for further details.
Number of places	Unlimited
	No booking required

Course Title	**Health, safety and introduction to ethics for PhD & MPhil degrees**
Duration	1 day
Staff member	Dr. John Latchford
Time/Date/Venue	09:30-15:30, Thu 24th October 2019, F16 Memorial building
Description	An introduction to Health and safety and ethics in PGR research. ***This course is compulsory for all new PhD & MPhil candidates.*** Contact Dr. John Latchford (j.w.latchford@bangor.ac.uk) for further details.
Number of places	Unlimited
	No booking required

Course Title	**Ad hoc quantitative methods and GIS research support for postgraduate students**
Staff member	Dr Isabel MD Rosa
Description	I am a Lecturer in Environmental Data Analysis at Bangor University since 2018. By way of background, I am a landscape ecologist with degrees in Forestry (BSc, University of Lisbon, Portugal), Natural Resources Management (MSc, University of Lisbon, Portugal), and Computational Ecology (PhD, Imperial College London, UK). My main research focus on predicting future land use change and its potential impacts on biodiversity and ecosystem services. If you're interested, you can learn more about it here: https://www.bangor.ac.uk/natural-sciences/staff/isabel-rosa/en#overview
	Throughout my career I have dealt with many different types of (messy!) datasets, and have to perform several different types of quantitative and statistical analyses, both using spatial and non-spatial data. To process the data and perform these analyses I mostly use R, but also Python and C++. For GIS data processing I have worked for many years with ArcGIS (less experienced with QGIS). So if you're struggling in your research project, and would like to discuss GIS or statistical/quantitative methods with someone very keen on these topics, I'd be happy to advise.
	Email is the best way to contact me in the first instance (i.rosa@bangor.ac.uk). Three things I require in order to be able to help you: - A clear explanation of what the problem is: what is the question that you're trying to answer? - A clear explanation of the dataset, e.g. what are the different columns in your excel spreadsheet (full description, units, etc.) - A clear explanation of the code that you send me. Please don't just send me your R code, make sure you explain carefully.

	If I can't help/advise via email, I'll then arrange a meeting either personally or via Skype call.
Other information	Please contact i.rosa@bangor.ac.uk

Course Title	**Maths for Physics**
Duration	16 hours
Staff member	Dr Mattias Green (m.green@bangor.ac.uk)
Time/Date/Venue	See timetabled lectures in Menai Bridge for OSX3018
Description	The course gives an introduction to mathematical methods used in physical sciences, and applies them to physical oceanography. It is taught through a series of joint lectures and in-class problem solving sessions.
Number of places	6
	To register contact Dr Mattias Green (m.green@bangor.ac.uk)

Course Title	**Ecological Assessment of Forest Resources**
Duration	5 days in total
Staff member	Prof. John Healey (j.healey@bangor.ac.uk)
Time/Date/Venue	Various dates in semester 1; contact Prof. Healey for information
Description	This course is primarily aimed at students who will be carrying out field assessment of forest, woodland or heathland vegetation in their research projects, but who have not yet had any hands-on experience with the commonly used sampling or inventory methods, or analysis of their data, for this type of assessment. This training will be primarily focused on "learning by doing" though participation in up to three all-day field practicals, each followed by a half-day lab practical, in the first case to identify the plant specimens collected and in the second and third cases to analyse the inventory plot data recorded in the field. Introductory lectures will provide the background to each practical covering: (i) basic concepts underpinning plant identification, the traits and tools that are used, floristics, and the analysis and use of the resulting data; (ii) quantitative tree inventory in forests including relevant sampling principles and data analysis to characterise forest structure, composition and the status of individual species' populations; (iii) approaches to assessment of forest dynamics and tree regeneration.
Number of places	25
	To register, please contact Prof. John Healey (j.healey@bangor.ac.uk)

Course Title	**Ecologically-based forestry**
Duration	4 x 2 hr seminars plus guided group work
Staff member	Prof. John Healey (j.healey@bangor.ac.uk)
Time/Date/Venue	Various dates in semester 1; contact Prof. Healey for information
Description	Primarily aimed at students who need knowledge about the application of ecological science to sustainable forest management, as background for a range of research projects on biodiversity conservation or ecosystem services within managed forest ecosystems, or as a core component of research projects focused on forest management. This training will be based on attending a one hour lecture giving an overview of each subject, then participating in a group to research scientific evidence relevant to a particular topic within that subject before presenting this as a basis for brief class discussion. It is also available via distance learning. The main subjects are: (i) silvicultural systems (natural forest and plantation) – choice, history, key ecological and practical differences

	amongst systems, relationship with biodiversity; (ii) conversion, transformation, secondary forests and restoration – "near natural" and "continuous cover" forestry, secondary succession, secondary forests and their management, approaches to conversion and restoration, accelerated natural regeneration.
Number of places	25
	To register, please contact Prof. John Healey (j.healey@bangor.ac.uk)

Course Title	**World Forest Resources and Forest Policy**
Duration	4 hrs plus guided group work
Staff member	Prof. John Healey (j.healey@bangor.ac.uk)
Time/Date/Venue	Various dates in semester 1; contact Prof. Healey for information
Description	This course is primarily aimed at students who need knowledge about some of the main "global grand challenges" concerning forests, and an understanding of the role of research in providing the evidence needed to address these, as background context for their research. This training will be based on attending a one hour lecture giving an overview of each challenge, then participating in a group to research scientific evidence relevant to a particular topic within that challenge before presenting this as a basis for brief class discussion. The challenges will be grouped around the following themes: (i) world forest resources – definitions and classification; (ii) deforestation and forest degradation – scales, rates, distribution and causes; (iii) ecosystem services (global environmental role of forests) – global climate change, biodiversity, water, soils, resilience; (iv) policy issues, instruments and initiatives – livelihoods, legislation, FLEGT, sustainability, certification, REDD.
Number of places	25
	To register, please contact Prof. John Healey (j.healey@bangor.ac.uk)

Title	**First Aid Training for Field Work**
Duration	1 day
Staff member	Contact Dr Neal Hockley. Course is run by 1FirstAid1
Time/Date/Venue	All day (exact times TBC), 11th Nov 2019 9th December 2019 Treborth Botanic Garden
Description	This will be a practical, outdoor-focused first aid course. Bring a packed lunch, waterproofs and clothing/shoes that you don't mind getting wet/dirty – part of the course will be outside, whatever the weather!
Number of places	12 on each day – but additional courses will be run in 2020 if demand is high – let me know..
Other information	Open to all SNS PGRs, with priority given to those planning fieldwork. 12 places max each day. If there is demand, we hope to run additional dates later in the year. Please email n.hockley@bangor.ac.uk to book a place.

Title	**Field work planning workshop - tips, tricks and horror stories**
Duration	2 hours
Staff member	Dr Neal Hockley and 2nd & 3rd year PhD students
Time/Date/Venue	Tuesday 19/11/2019 1-3pm Thoday F1
Description	How to maximise the chances that your fieldwork is a success, you get the data you need (and don't lose it), and nobody dies. Research students who

	have already completed their fieldwork will pass on their hard-earned wisdom, and we will work through realistic scenarios. We will adapt the session to your interests, but topics covered might include: safety, risk assessment, insurance, hiring & training research assistants/translators, practical sampling design, research permissions/permits, working with partner organisations, equipment/technology, data collection/recording/management.
Number of places	Flexible
Other information	Recommended for all PGRs planning fieldwork (whether UK or overseas, natural or social science). Please email n.hockley@bangor.ac.uk to book a place (briefly outline what type of fieldwork you are likely to be doing, and any specific topics you would like to cover).

Course Title	**An Introduction to Evidence Synthesis**
Duration	2 days.
Staff member	Prof Andrew Pullin
Time/Date/Venue	20-21st November, 2019. Thoday F25 (20th Nov) and Memorial F16 (21st Nov)
Description	A 2-day short course on methodology of Systematic Review and Systematic Evidence Mapping.
Number of places	Max 30
Other information	Open to all COESE PGRs. Please email Chris Parry c.parry@bangor.ac.uk to book a place and for more details.

Course Title	**Ethics for research involving human subjects**
Duration	c1 hour
Staff member	Dr Neal Hockley
Time/Date/Venue	12th December 2019 9-10 am
Description	This session will build on the introduction to ethics provided by John Latchford during the Professional Conduct training, focusing in more depth on ethical considerations of research involving human subjects. We will discuss what to consider when planning your research, how to ensure you get ethics committee approval, and use some realistic scenarios to explore how to deal with issues that may arise during your research.
Number of places	Flexible.
Other information	**Compulsory** for all PGRs planning research involving human subjects, those from other schools welcome. Please email n.hockley@bangor.ac.uk to book a place (briefly explain what type of work you are likely to be doing, so that we can tailor the session).

Course Title	**Social research ethics mini-conference**
Duration	c1-1.5 hours, exact timetable TBC
Staff member	Dr Neal Hockley, Prof Julia Jones, Heli Gittins, Harriet Ibbett and other speakers TBC.
Time/Date/Venue	12th December 2019 10.30 – 12:00
Description	Short talks + Q&As by staff and PGRs exploring practical ethical challenges faced during their research, and the approaches they took to solving them.

	The aim is to encourage discussion of real-life research ethics dilemmas between active researchers in the college. Note – this will follow on from the session for new PGRs on social research ethics 9-10am, but is open to all.
Number of places	Flexible.
Other information	**Open to all PGRs and staff, whether you are doing research involving human subjects or just interested in it!** Ideally RSVP n.hockley@bangor.ac.uk

Course Title	**Social Science Methods Training: Social Surveys**
Duration	3hrs (split over two consecutive weeks)
Staff member	Dr. Will Andrews (w.andrews@bangor.ac.uk)
Time/Date/Venue	12/11.19 13:00-14:00; 19/11/19 14:00-16:00
Description	Introduction to social research methods, survey design and implementation.
Number of places	Please confirm attendance with Dr. Will Andrews (w.andrews@bangor.ac.uk)
Other information	Materials available online if you are unable to attend the course – contact Dr. Will Andrews (w.andrews@bangor.ac.uk)

Course Title	**An introduction to agent-based modelling**
Duration	Semester 1
Staff member	Simon Willcock (s.willcock@bangor.ac.uk)
Time/Date/Venue	5 weeks - Please email for further information
Description	As part of a third year undergraduate module (DXX3800), I teach a short course of practicals in Semester 1. During these practicals, students learn how to create agent-based models within NetLogo. You can follow this course in-person or online (via blackboard).
Number of places	Unlimited
Other information	An unlimited number of people can follow the course online. Places are limited for in-person practicals. Undergraduates signed up to DXX3800 as part of their degree program will be given priority. Please contact Dr. Simon Willcock (s.willcock@bangor.ac.uk) for details.

Course Title	**Molecular phylogenetics training**
Duration	TBC
Staff member	Dr. Anita Malhotra (a.malhotra@bangor.ac.uk)
Time/Date/Venue	Semester 2 – dates and venue to be confirmed.
Description	This will be an open-ended series of workshops, assuming no previous experience, to provide training on how to generate phylogenetic trees from nucleic acid and protein sequence data.
Number of places	10
Other information	Please contact Dr. Anita Malhotra (a.malhotra@bangor.ac.uk) for details of course dates.

Course Title	**Social Science Methods Training: Qualitative Methods**
Duration	7hrs (split over 3 consecutive weeks)
Staff member	Dr. Will Andrews (w.andrews@bangor.ac.uk)
Time/Date/Venue	Tbc – Semester 2 2019
Description	Introduction to qualitative methods for social research, including overview of focus groups, ethnography, visual and textual analysis; plus a more in-depth session on interviewing and thematic analysis.

Number of places	Please confirm attendance with Dr. Will Andrews (w.andrews@bangor.ac.uk)
Other information	Materials available online if you are unable to attend the course – contact Dr. Will Andrews (w.andrews@bangor.ac.uk)

Course Title	**BangoR 1 – Introduction to R**
Duration	2-hour workshop
Staff member	Dr Isabel MD Rosa
Time/Date/Venue	May-June 2020
Description	This is an introduction to R, using RStudio – no prior knowledge required.
Number of places	No limit: Please contact i.rosa@bangor.ac.uk to book a place
Other information	It will be made available online (panopto) soon.

Course Title	**BangoR 2 – Data visualization in R**
Duration	2-hour workshop
Staff member	Dr Isabel MD Rosa
Time/Date/Venue	May-June 2020
Description	This is a workshop on how to manipulate your raw data into nice figures that you can use for research communication. We will use data cleaning techniques, data summary and ggplot2 for data visualisation – prior knowledge of R required (e.g. via attending BangoR 1).
Number of places	No limit: Please contact i.rosa@bangor.ac.uk to book a place
Other information	It will be made available online (panopto) soon.

Course Title	**BangoR 3 – R as a GIS**
Duration	2-hour workshop
Staff member	Dr Isabel MD Rosa
Time/Date/Venue	May-June 2020
Description	This is a workshop on how to manipulate spatial data in R (e.g. shapefiles and rasters). We will import/export spatial data and process spatial operations with both shapefiles and rasters – prior knowledge of R required (e.g. via attending BangoR 1).
Number of places	No limit: Please contact i.rosa@bangor.ac.uk to book a place
Other information	It will be made available online (panopto) soon.

Course Title	**BangoR 4 – automation in R (tbc)**
Duration	2-hour workshop
Staff member	Dr Isabel MD Rosa
Time/Date/Venue	May-June 2020
Description	This is a workshop on how to automate analyses in R by understanding the principles of if-else statements, for- and while-loops. Prior knowledge of R required (e.g. via attending BangoR 1 and a bit more preferably).
Number of places	No limit: Please contact i.rosa@bangor.ac.uk to book a place
Other information	It will be made available online (panopto) soon.

Course Title	**Advanced Statistics using R**
Duration	2 days
Staff member	Dr. James Gibbons (j.gibbons@bangor.ac.uk)
Time/Date/Venue	9am-5pm 4-5th June 2020. Room to be confirmed.
Description	The course will assume a basic familiarity with R (importing data, base graphics, analysis of variance and linear regression) and cover generalised linear modelling, mixed effects modelling, generalised

	additive modelling and the production of publication level graphs using ggplot2.
Number of places	10
	To register for this course please contact the PGR admin Hub (sciencesite.pgr@bangor.ac.uk)

17. Appendix 1 – Resources for Postgraduate Researchers and Supervisors.

18.   Appendix 2 – PGR induction presentation slides.

19.   Appendix 3 - CoESE: Training Needs Analysis form

Postgraduate Researcher Name	
Supervisor(s)	
PhD Title	
School/College	

Development categories (leave categories that are not relevant to your project blank and add any additional categories below)	Please assess your skill level on a scale of 1-10 (10 = Expert, 5 = Intermediate, 1 = Beginner)	Evidence of current / previous training in this area	What further courses/ workshops/ training do you intend to complete in order to address these training needs?
Project Management			
Poster Presentation Skills			
Conference Presentation Skills			
Planning your research			
Time management			
Statistics – SPSS, R4All, Matlab			
Effective literature searching			
Field First Aid skills (where applicable)			
Wellbeing & Stress			

Evidence Synthesis/ Evidence review			
Laboratory skills relevant to your project			
Field skills relevant to your project			
Computing/programming skills relevant to your project			
Data analysis/statistical skills relevant to your project			
Relevant foreign language skills			
Other research skills e.g. use of library facilities, electronic library and online literature searches.			
Research design & ethics			
Risk assessment (H&S)			

PGR name: Signature: Date:

Supervisor name: Signature: Date:

20.   Appendix 4 – The importance of stupidity in scientific research