

# MASTER OF RESEARCH (MEDICAL RESEARCH) 2019-2020 APPLICATION HANDBOOK



## Courses

Postgraduate Certificate in Medical Research

MRes Medical Research

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## Introduction

The **MRes Medical Research** and the **PGCert Medical Research** are postgraduate qualifications offered by the University of Brighton via the Brighton & Sussex Medical School's Division of Medical Education. They are designed for part-time or full-time study to meet the educational needs of those whose career might have medical research as a substantial component, or as the basis for entry into a PhD or MD degree.

These courses are open to all, however, the main student group comprises BSUH Academic Clinical Fellows (ACFs), NHS research registrars and doctors working in the pharmaceutical industry or employed in an NHS setting where medical research is a function of their day-to-day activity. The PGCert is of particular relevance for F2's and Academic F2's who are not able to pursue the whole MRes program. These Courses are also relevant to dental trainees and other professional who might engage in health research.

The content of the course includes a range of scientific and clinical research methodologies and statistical methods. It is research-based, with core teaching materials drawing from published research and current research projects within BSMS.

## Aims and Learning Outcomes for the Course

### Aims

The aim of the course is to provide high quality education and training in health research for those who may be engaged in it. It aims to address an identified gap in the educational needs of doctors planning a career in research, or as preparation for a PhD or MD or as part of the preparations for an existing research programme

The course objectives are:

- To provide robust education in various aspects of research to compliment and support research exposure and experience for academically-gifted medical and dental trainees and research registrars;
- To develop independent researchers of the future, able to compete for Research Training Fellowships- e.g. leading to a PhD or MD to apply for research funding grants, and further postdoctoral research;
- To contribute to the NHS drive to develop the vibrant academic community essential for state of the art healthcare.

## Learning Outcomes

By the conclusion of the Master's programme students will be able to demonstrate all of the Learning Outcomes from the Mandatory modules to date plus those of their Optional modules, plus the dissertation module.

Learning outcomes for each module are detailed below:

### Knowledge and theory

1. An advanced, critical understanding of major research designs and methodologies and the ability to apply these to develop high quality research proposals.(MDM10, MDM12, MDM34, MDM141, MDM165);
2. An advanced level of knowledge and ability to use statistics in the design of research and to analyse data appropriately for different research methodologies (MDM10, MDM12, MDM34, MDM66, MDM112, MDM141, MDM165);
3. Originality and advanced knowledge in the design and conduct of a research study, whilst assuring compliance with current guidelines for ethical conduct and good practice in research (MDM10, MDM112, MDM165);
4. A critical understanding of research governance and ethical issues and requirements, and a demonstration of applying these appropriately within a research project (MDM10, MDM112, MDM141, MDM165);
5. A high level of commitment to, and an advanced ability to prepare research findings for publication and dissemination in appropriate arenas (MDM10, MDM34, MDM112, MDM165).

### Skills

1. Critical and systematic development, justification and submission of a research proposal (MDM10, MDM141, MDM112, MDM165);
2. Effective and appropriate data collection and analysis methods (MDM10; MDM12, MDM66, MDM141, MDM165);
3. In-depth critical analysis and synthesis and evaluation of data from a wide variety of complex sources (MDM10, MDM12, MDM34, MDM66, MDM112, MDM141, MDM165);
4. Autonomous project management through time management, goal and deadline setting (MDM10; MDM112, MDM165);
5. Critical analysis of their own and others' research work and advanced scholarship in their discipline (MDM10; MDM12, MDM34, MDM112, MDM165);
6. Effective communication of project plans and results to peers, seniors and juniors (MDM10; MDM112; MDM66; MDM165; BSMS research seminars);
7. Appropriate practical skills for the conduct of their research. (MDM10, MDM12, MDM34, MDM66, MDM112, MDM141, MDM165, DME Research Skills programme).

## Entry Requirements

The MRes is primarily aimed at BSUH Academic Clinical Fellows. Applications from other NHS staff, research registrars, doctors in the pharmaceutical industry and others employed in a setting in which research is a function of their everyday activity will also be considered. The PGCert is open to all who wish to enhance their research knowledge and skills.

*Minimum entry requirements for the MRes:*

BSMS Academic Clinical Fellowship or evidence of involvement in an ongoing research programme, award of a research grant or employer support for a locally-funded research project intended for publication.

All applications will be subject to the University Equal Opportunities Policy. Students for whom English is not a first language must demonstrate an acceptable standard of comprehension and communication in the English Language (IELTS: minimum overall score of 7.0 and 7.0 for the writing element).

**There will be an Induction Day for all successful applicants which you are strongly recommended to attend.**

**The Induction Day will be held on Thursday 12<sup>th</sup> September 2019.**

## Course Structure

The PGCert and MRes courses can be studied on a full time or part time basis. Both of the courses include mandatory and optional modules, therefore please see the tables below for further details:

### PG Certificate in Medical Research (60 credits)

Module	Status
MDM10 Research Methods and Critical Appraisal	Mandatory (20 credits)
<b>PLUS TWO of the 20 credit modules listed below</b>	
MDM66 Essential Statistics for Medical Research	Optional (20 credits)
<b>OR</b>	
MDM12 Epidemiology	Optional (20 credits)
<b>OR</b>	
MDM112 Clinical Trials Management	Optional (20 credits)
<b>OR</b>	
MDM34 Evidence-based Practice	Optional (20 credits)
<b>OR</b>	
MDM141 Advanced Research Skills	Optional (20 credits)

### MRes in Medical Research (180 credits)

Module	Status
MDM10 Research Methods and Critical Appraisal	Mandatory (20 credits)
<b>PLUS</b>	
MDM66 Essential Statistics for Medical Research	Mandatory (20 credits)
<b>PLUS TWO of the 20 credit modules listed below</b>	
MDM112 Clinical Trials Management	Optional (20 credits)
<b>OR</b>	
MDM34 Evidence-based Practice	Optional (20 credits)
<b>OR</b>	
MDM141 Advanced Research Skills	Optional (20 credits)
<b>OR</b>	
MDM12 Epidemiology	Optional (20 credits)
<b>OR any other module agreed by the course leader</b>	Optional (20 credits)
<b>PLUS</b>	
MDM165 Dissertation	Mandatory (100 credits)

*Since high levels of critical analysis and originality in research is required throughout the course of study, students are encouraged to undertake MDM10 early on in their studies as this module provides both consideration of the appropriateness and the quality of the research designs used in primary and secondary research articles.*

## Timetable

### Core Modules

Module Code	Module Title	Date	Module Lead	Assessment Deadline
<b>MDM10</b>	Research Methods and Critical Appraisal (BSMS) (Occurrence B)	21 - 25 Oct 2019	Dr Trevor Welland	4 Feb 2020
	Research Methods and Critical Appraisal (BSMS) (Occurrence C)	18-22 Nov 2019	Dr Trevor Welland	4 Feb 2020
	Research Methods and Critical Appraisal (BSMS) (Occurrence D)	20-24 Jan 2020	Dr Trevor Welland	7 April 2020
	Research Methods and Critical Appraisal (BSMS) (Occurrence E)	9-13 Mar 2020	Dr Trevor Welland	2 June 2020
<b>MDM66</b>	Essential Statistics for Medical Research	6-10 Jan 2020	Dr Muzaffar Malik	2 June 2020

### Optional Modules

Module Code	Module Title	Date	Module Lead	Assessment Deadline
<b>MDM112</b>	Clinical Trials Management (Occ A)	13, 20, 27 Nov, 4, 11 Dec 2019	Nicky Perry	4 Feb 2020
	Clinical Trials Management (Occ B)	22-26 Jun 2020	Nicky Perry	8 Sep 2020
<b>MDM34</b>	Evidence-based Practice	10, 11 Oct, 14, 15 Nov, 12, 13 Dec 2019	Dr Trevor Welland	4 Feb 2020
<b>MDM141</b>	Advanced Research Skills	TBC	Dr Trevor Welland	TBC
<b>MDM12</b>	Epidemiology	2-6 March 2020	Dr Priya Paudyal	<b>Exam</b> 8 May 2020

## Module Descriptions

### **MDM10: Research Methods and Critical Appraisal**

This module aims to provide students with an understanding of how to conduct research in their specialist area. It will provide students with an understanding of research methods in health and social care and the ability to relate appropriate methods to research questions. Students will be equipped to search and critically review the literature, to develop and justify a research proposal, and to anticipate potential ethical issues in their research proposal.

On successful completion of this well-established module you will be able to:

- demonstrate a critical understanding and evaluation of major research designs and their relative strengths and limitations;
- systematically develop and justify a chosen research approach and methodology to investigate a specific topic within their subject;
- produce a research proposal which demonstrates appreciation of scientific methods appropriate to their specialist area;
- critically appraise a variety of research papers across a range of study designs;
- carry out an appropriate, rigorous review of the literature;
- be aware of ethical and governance issues in research.

### **MDM12: Epidemiology**

This module promotes the understanding of epidemiological theory and practice as a basic science in public health. It provides fundamental concepts and essential analytical methods pertaining to design, analysis, interpretation, implementation and evaluation of epidemiological and health services research.

On successful completion of the module participants will be able to critically:

- describe, examine and analyse the role of epidemiology in investigating health issues;
- evaluate various measures with which to describe the health status of populations and critically describe the range of routine and non-routine data sources of public health and health outcomes data;
- apply appropriate measures and tests in the analysis of public health data;
- understand the criteria for establishment of screening programmes, and assess existing programmes against these (including issues of sensitivity and specificity of tests);
- compare and contrast the use of study designs commonly used in epidemiological research and to explore current issues in practical study design and execution;
- describe, examine and analyse the role of epidemiology as the basic science of public health in investigating public and environmental health issues.

### **MDM66: Essential Statistics for Medical Research**

This module is specifically designed for doctors and other health professionals who wish to improve their understanding and use of statistical methods and techniques. It is a pragmatic module and participants will be able to apply their learning immediately to practical applications using SPSS. They will produce reports demonstrating their ability to manipulate, interpret and apply data in real life and research situations.

On successful completion of the module participants will be able to:

- set up a database for research data;
- differentiate between different types of data, choose and implement appropriate descriptive methods;
- interpret raw output from data analysis packages (SPSS);

- formulate hypotheses and test them using appropriate statistical procedures;
- interpret and accurately summarise the results of such tests in journal report format.

### **MDM34: Evidence Based Practice**

This module is suitable for those engaged in any health or social care setting such as hospital doctors, general practitioners, nurses, physiotherapists, etc. who are undertaking clinical duties in daily lives, or those students in a master's programme who wish to enhance their skills in applying research literature, policies and guidelines. The module aims to provide students with an appreciation of the elements of evidence based practice and its role in decision making.

On successful completion of the module students will be able to demonstrate:

- comprehensive evidence-searching skills;
- critical appraisal of research and other evidence for its validity and usefulness;
- ability to evaluate evidence and to incorporate findings into decisions in clinical practice;
- critically appraise the roles of governmental and other bodies in their guidance for best practice;
- an advanced level of knowledge of and commitment to principles of equity in service evaluation and provision.

### **MDM112: Clinical Trials Management**

The aim of this module is to enable health practitioners and specialist researchers to develop their knowledge and ability to participate in and conduct clinical trials research with the aim of catering for professionals from a wide range of backgrounds. The emphasis is on Multidisciplinary working for all staff in clinical trials. It is intended that this education and training should be delivered at multiple sites to enhance its accessibility. It is intended to provide training to equip participants with knowledge to be future CIs/PIs of clinical trials.

One of the aims is to bring to life what might appear to be a very dreary subject – by incorporating real life examples of successes and catastrophes, and to engage expert speakers from practice who can tell their tales.

On successful completion of the module participants will be able to:

- have a comprehensive understanding of the design and management of clinical trials;
- Implement principles and strategies of trial management;
- understand the relationship between researchers and industry in clinical trials;
- have an advanced level of understanding of Good Clinical Practice (GCP) Guidelines, and research ethics and governance in clinical settings;
- conform to statutory requirements when conducting clinical trials in medicine and surgery.

## MDM141: Advanced Research Skills

This module aims to advance knowledge and practice of research by synthesising a wide range of sources to underpin an advanced level of knowledge of theory and practice in research skills. It builds upon teaching in other modules and in a programme of Research Skills Workshops to assess the application of advanced theoretical learning in practical outputs – with a strong emphasis on analysis, synthesis, reflexivity and application of theory to practice in the context of the students' own research projects. In this way, practical research skills are raised to a higher, advanced level – which is reflected in the module assignment.

On successful completion of this module students are expected to be able to apply an advanced knowledge base and demonstrate the acquisition of practical research skills, analysing and synthesising information from a wide range of sources, to:

- the development and production of procedures and information sheets for obtaining informed consent in research;
- the preparation of a research proposal for submission to a Research Ethics Committee;

AND ANY **ONE** OF THE FOLLOWING:

- establishing and implement an appropriate framework for Sampling and Sample size (Power) Calculations;
- inform, develop and apply appropriate Interviewing Skills;
- inform, develop and apply Focus Group skills;
- inform, develop and apply appropriate skills for conducting Systematic Reviews;
- inform, develop and apply appropriate statistical/qualitative data analysis frameworks.

## MDM165: The Dissertation

In order to be able to progress to the dissertation level you must first have the proposal agreed.

It is important to start thinking about your dissertation early on in the course:

- **Full-time students** should take the MDM10 module at the start of their course (Semester 1) as this is necessary preparation for the dissertation. The dissertation proposal should ideally be submitted by the end of Semester 1.
- **Part-time students** should take the MDM10 module in the first year of their course as this is necessary preparation for the dissertation. The dissertation proposal should be submitted by year 2, Semester 1.

You are advised to attend a Dissertation Day prior to submitting your Dissertation Proposal; these are scheduled a few times each year and dates can be found on the main timetable.

You will be able to choose a dissertation that is relevant to your professional interests and practice, or ongoing research interests. Your choice of topic must be discussed with the course leader and

then agreed by the DME Dissertation Panel after a formal presentation of your proposal to the Panel. Once your dissertation has been agreed you will be assigned a dissertation supervisor. Other regulatory requirements can be found in the Dissertation Handbook.

## Fees

For fee enquiries please email [fees@brighton.ac.uk](mailto:fees@brighton.ac.uk) or telephone: **01273 642449**.

**Please note: if you receive a 'Fail' result for a module and are asked to re-take it with attendance you will be charged again for the module.**

## Teaching Staff

Academic staff from the Division of Medical Education as well as other staff from the Faculty of Health and Social Science and other Faculties in the University, are involved in the teaching. Specialist teaching may be provided by consultants, specialists and other clinical staff from Trusts and organisations in and around the region. The extensive contribution of expert practitioners to the teaching of the modules is a distinctive feature of courses within postgraduate medicine at the Division of Medical Education.

## Teaching and Learning Methods

As with all Masters courses, there is a considerable degree of independent study. Teaching methods encompass lectures, whole group discussions, small group discussions, critical appraisal workshops and individual tutorials. Maintaining employment throughout the course ensures the transfer of knowledge and skills from the course into the workplace.

## Assessment

Most modules require an in-depth evaluation of a topic chosen by the student and agreed with the module leader. It is normally a 3,000 word written assignment. The Dissertation is a 16,000 word project of the students' own choice.

## How to Apply

Please apply online via the following link:

<http://www.bsms.ac.uk/postgraduate/taught-degrees/>

If you have any further questions please contact the Programme Administrator via the email address on the cover page.