



**MSc Physics with Education**  
Course Handbook for Postgraduate Students

2022-23

## Contents

Contents.....	1
Introduction .....	2
Course Information MSc in Physics with Education .....	2
Choosing your modules .....	2
Key Contacts.....	3
Teaching Strategy.....	4
Assessment Strategy .....	4
Assessments and Deadlines for Formal Submissions .....	5
Submitting your work .....	5
Feedback to students.....	5
Support for your learning.....	6
Study Skills and Resources .....	6
Giving feedback about your course.....	8

## Introduction

Welcome to the MSc in Physics with Education at the University of Sussex. We hope that you will enjoy studying here and that you participate actively in the life of the University. Our aim for all students is to provide you with the opportunities to achieve your potential and obtain the best degree possible.

This document is a reference to key points of about the MSc in Physics with Education at the University of Sussex. It describes how the course is organised and the faculty who are your key contacts. It provides links to the online descriptions of both compulsory and specialised options modules, and explains the methods of teaching and assessment we use. It also offers hints about how to make the best use of your time, outlines some of the teaching and learning resources provided on the course and at the University.

In addition to this handbook, the *Student Handbook* [www.sussex.ac.uk/students/handbook](http://www.sussex.ac.uk/students/handbook) provides you with University-wide information.

Prof Alessandro Cerri

Course Convenor, MSc in Physics with Education

## Course Information MSc in Physics with Education

For the full details of module content, module aims, and learning outcomes

<http://www.sussex.ac.uk/mps/internal/departments/physicsandastronomy/pg/pgcourses>

This course allows you to choose among a number of optional modules common with other Physics MSc courses. Six Physics modules are to be taken over the two taught terms (autumn and spring), in addition to two core education modules. This adds up to a total of either five in autumn and three in spring, or four in each term. The education project is then submitted in the summer term.

If you decide the MSc course you have selected is unsuitable for you and you wish to change to another, complete a Course Transfer Form as well as a new Module Options form for your intended new course. Please collect the three required signatures on the Transfer form yourself, then email the two forms to [mps\\_pgtooffice@sussex.ac.uk](mailto:mps_pgtooffice@sussex.ac.uk).

The form is available here (see the bottom of the web page):

<http://www.sussex.ac.uk/mps/internal/departments/physicsandastronomy/pg/studyingmsc/modules>

The deadline for course transfer requests is by the end of Week 3 in the Autumn term.

## Choosing your modules

For the Physics with Education MSc, you will develop a 60 credits project on an educational aspect of physics or astronomy, under the supervision of TBC, from the Sussex School of Education.

To select your option modules you must complete the **Options form** for your MSc course. You can download the Options form for your MSc Course from

<http://www.sussex.ac.uk/mps/internal/departments/physicsandastronomy/pg/studyingmsc/modules>

If you have already handed in an Options form and you want to change one or more of your modules, you must complete a new options form, get it signed by your MSc course convenor and email it to the School Office. Please note that we cannot guarantee any module changes as these are subject to availability (i.e. number of students in the module) and timetable clashes. **No option module changes will be allowed after WEEK TWO of each term (Autumn/Spring).**

## Key Contacts

The course is managed and developed by the Department of Physics and Astronomy within the School of Mathematical and Physical Sciences, and the course convenor is Prof Alessandro Cerri. The contact person from the School of Education is TBC.

The Department of Physics and Astronomy is based in Pevensey 2/3 buildings, and the School Office is in Pevensey 2 Building. If you have any queries about your course overall, or your module choices, you should contact the School Office for the School of Mathematical and Physical Sciences:

E: [mps@sussex.ac.uk](mailto:mps@sussex.ac.uk)

T: 01273 873254

## External Examiners

Prof Sean Giblin  
School of Physics & Astronomy  
Cardiff University  
WX/1.06 Queen's Buildings  
West Building Extension  
Cardiff  
CF24 3AA

Dr Judith Croston  
Faculty of Science, Technology, Engineering & Mathematics  
School of Physical Sciences  
The Open University  
Walton Hall  
Milton Keynes  
MK7 6AA

Dr Paul Saffin  
Faculty of Science  
University of Nottingham  
Room B104  
Centre for Astronomy & Particle Physics  
University Park  
Nottingham  
NG7 2RD

To Note: Modules from School of Education to be reviewed by their own external:

Dr Roger Levy  
School of Education  
University of Hertfordshire  
Hatfield  
Hertfordshire.

### **Teaching Strategy**

This course is offered as a one-year full-time course, or as a part-time course over two academic years. The course begins in September in the autumn term and finishes at the beginning of September in the following year.

Term dates are available here

<http://www.sussex.ac.uk/aboutus/keydates>

Course modules are spread across the autumn and spring terms, and are taught in lectures, seminars, workshops and practical sessions according to the requirements of the module. Over the summer period students take on a major research project for their MSc dissertation which they must hand in by the specified date in August.

Your Education modules are taught as seminars and are called Communicating STEM (Term 1), Researching STEM (Term 2), with Education Research Methods Sessions (Terms 1 & 2).

### **Assessment Strategy**

The course uses a number of different modes of assessment including unseen examinations, coursework, project work and dissertation. In order to pass a particular module you need a mark of at least 50%. This mark may be derived from a single exam or as the weighted average of several units of assessment (exam, coursework, etc.). Coursework is submitted during the period of the module and submission dates are notified to you in advance. Formal submission dates are noted on your Sussex Direct pages. Note that tutors are not allowed to provide extensions to submission deadlines.

The assessment details for each module are listed online:

<http://www.sussex.ac.uk/mps/internal/departments/physicsandastronomy/pg/pgcourses>

## **Assessments and Deadlines for Formal Submissions**

Full details about the assessment deadlines for each module are available on your personal Sussex Direct study pages.

Exams take place in three assessment periods. Term 1 modules will be examined in January, and Term 2 modules will be examined in May/June. There is also a formal period for resitting assessments in June (T1 modules)/August (T2 modules). We encourage you to regularly check your study timetable in Sussex Direct and e-mails. The MSc Dissertation is handed in on a specified date during August. Your Sussex Direct account will tell you how to submit the dissertation (usually via Canvas).

Please note you will have assessment deadlines. Each one of your module assessments and deadlines for submission appears in your study timetable on the Sussex Direct web page. It is your responsibility to be aware of these deadlines.

## **Submitting your work**

You must submit your work to the module Canvas page via the Assessments tab, unless otherwise specified on Sussex Direct. This is marked by the tutors and you can view your feedback online. If you do not understand the tutor's comments, please discuss them with the tutor or lecturer.

It is important that such deadlines are met; the University applies a system of penalties to assessments that are handed in late. For more details, please consult the University Examinations and Assessment Regulations:

<http://www.sussex.ac.uk/adqe/standards/examsandassessment>

The assessment of the MSc research project/dissertation includes a dissertation and, for some modules, an oral presentation. Contact with the MSc research project Supervisor should be established at the beginning of the academic year, in your first week.

## **Feedback to students**

There are a number of ways in which you will receive feedback regarding your progress:

- Marked coursework - You will get feedback each time you have a piece of coursework marked, which can be picked up in lectures or during a lecturer's feedback/office hour.
- Lecturers' feedback hours - For details, please search Sussex web pages for the relevant staff member and their feedback hours for the week will be displayed.

## Support for your learning

In addition to your MSc course convenor, you will have a dissertation supervisor. If you have any queries with a specific module, you can visit the lecturer during their advertised feedback/office hours. You can also get valuable information, advice and support from the Student Life Centre. They can help you with many issues including:

- Personal concerns affecting study progress or well-being
- Funding and finance including scholarships, bursaries and hardship funds
- Sources of help to improve academic performance – identifying obstacles to learning
- Understanding university systems and regulations in relation to assessment, services, complaints, conduct, and discipline.
- Progression, intermission and withdrawal processes - discussion and support
- Referrals to other professional services on campus
- Exceptional Circumstances

<http://www.sussex.ac.uk/studentlifecentre/>

## Study Skills and Resources

### Turnitin

Turnitin is an online 'text matching' tool that compares a student's work to a huge database of other files and shows where there are strong similarities. It is often referred to as plagiarism detection software.

### Skills Hub

The University's Skills Hub gives advice on writing well, including hints and tips on how to avoid making serious mistakes. Visit and make use of the resources there. You will also find helpful guides to referencing properly and improving your critical writing skills.

<http://www.sussex.ac.uk/skillshub/?id=1>

### Referencing

These are some useful websites and places to go to for advice on how to reference essays and dissertations:

- Skills Hub website on referencing <http://www.sussex.ac.uk/skillshub/?id=251>
- Use the resources on your Study Direct pages associated with your modules.

### Student Support Unit

The Student Support Unit is a team of specialist advisors who work with students who may need support at the university due to a long term condition.

<http://www.sussex.ac.uk/studentssupport/>

## Academic Development Support

The services of Academic Development Support are available free of charge to all full-time international/overseas students completing a full degree. They offer support with academic cultural differences; learning styles; what is meant by plagiarism, argument and critical analysis, as well as looking at English for academic purposes.

The Sussex Language Institute runs free 'English Language and Study Skills Support' sessions for International students, including in-depth guidance on referencing. There is also advice on how to reference using the Harvard, Vancouver, Numeric and MLA referencing styles.

<http://www.sussex.ac.uk/languages/english/acadev>

## Academic Integrity and avoiding Academic Misconduct

### Academic Integrity

The University of Sussex has a set of Academic Integrity Values which all students are expected to follow. These values are:

- **Honesty:** The work you produce for assessment is your own and where you have used other's work, this is clearly acknowledged: this is done by adding references to your assessments.
- **Trust:** Your tutors and fellow students can trust you to be honest about the work you produce and submit for assessment.
- **Fairness:** You agree that all students should be fairly treated and that you do not try to gain advantage by not producing your own work for assessment.
- **Respect:** You treat other members of the academic community with respect: fellow students, your tutors and the admin staff.
- **Responsibility:** You take responsibility for your own learning and follow the University of Sussex Academic Integrity values and assessment regulations.

### Academic Misconduct

Academic misconduct is cheating. It includes

- Collusion
- Plagiarism
- Personation
- Misconduct in unseen exams
- Fabrication of results

There are strict rules on academic misconduct and penalties are severe.

The University's regulations and policy on Academic Misconduct are published in Section 2.9 of the Examination and Assessment Regulations Handbook available on the following web pages: <http://www.sussex.ac.uk/adqe/standards/examsandassessment>



Guidance on avoiding academic misconduct can be found on the Study Success and the “Skills Hub” at Sussex webpages.

### Practical Help and Advice

For practical help and guidance please refer to “Skills Hub”, where there is a wealth of information regarding skills to avoid academic misconduct. See:

<http://www.sussex.ac.uk/skillshub>

### **Giving feedback about your course**

Each module will have a feedback period, and your lecturer will explain when and how to give feedback. You can talk to your lecturers during their office hours, if you have any concerns about the course. You can also discuss this with the MSc Course Convenor, or the Head of Department. All staff contact details are available on the University web pages.

You can also give feedback to your student representative. Student reps are democratically elected to represent their peers. They enable a useful and effective communication link between staff and students. They provide helpful feedback to staff on modules and courses; raise concerns in a constructive manner; give feedback to other students on why particular decisions are made; and can help to pre-empt concerns becoming serious issues.

To find the details of your student rep, please check the noticeboard in the School, or visit:

<http://www.sussex.ac.uk/mps/internal/departments/physicsandastronomy/studentreps>



## **Term 2 Researching Physics Education (STEM)**

Level 7

11 x sessions, including in school research-time

### **Learning Objectives**

By the end of the module, a successful student should be able to:	
<b>LO1</b>	Demonstrate advanced knowledge and understanding of a substantive area of physics education and pedagogy
<b>LO2</b>	Employ a range of academic research and scholarship to identify and understand a key issue in physics education.
<b>LO3</b>	Critically evaluate the effectiveness of different research methods in physics education
<b>LO4</b>	Develop evidence-based explanations that explore a key area of physics education.

### **Assessment (15 credits, Level 7)**

3000 word essay – Assessment Period 2 – 100% weighting

### **Supporting tutorials**

Tutorials (group)	1	1 hour	3 & 6 & 9	3
Field Work – Collecting Data	1	3	5 - 10	15

An additional Handbook will be provided

## **Term 3 Physics Education Research Project**

Level 7

### **Learning Objectives**

By the end of the module, a successful student should be able to:	
<b>LO1</b>	Show a critical understanding, informed by current scholarship and developments in the field of physics education, of issues, processes and problems in an area of education, and a capacity to relate it to complex professional situations
<b>LO2</b>	Demonstrate a systematic knowledge and understanding of a substantive area of physics education
<b>LO3</b>	Critically appraise current literature relating to their specified area of education
<b>LO4</b>	Show a capacity to reflect on, critically review and evaluate empirical data and methodological approaches in their specified area of education.
<b>LO5</b>	Demonstrate the application of research methods in order to generate <b>originality</b> in understanding of how knowledge is created

### **Assessment (60 credits, Level 7)**

Mode of assessment	Subcomponent (where applicable)	Learning outcomes assessed	Duration or word length	Day and Week of submission	Weighting
DISSERTATION		1-5	12000	Assessment Period 3	100%

### **Supporting tutorials**

Teaching method	Number of sessions	Duration of sessions	Taught in weeks (and frequency per week if appropriate)	Total hours
Lecture	1	1 hours	1	1
Seminar	1	1.5 hour	1 & 3	3
Tutorial Supervision	1	1 hour	3 in total arranged individually	3

## **THE DISSERTATION (60 credits)**

The Dissertation draws on your learning from across the course in designing, conducting and reporting on an extended, empirical study of 12,000 words, which is similar to the Minor Project, but on a more extended scale. Students choose to do an original piece of research on an area of personal or professional interest, either related to your professional practice and context, or stemming from the range of substantive topics that you have explored across the course. (Those on the Research Leaders route will explore an area related to the school's strategic priorities). For professionals researching in similar contexts (e.g. Science teachers in secondary schools), the dissertation provides the potential for research collaboration, for example, investigating a topic across a larger number of institutions than would be feasible for an individual MA researcher. However, each individual written project must be developed to meet the learning outcomes independently, too.

In preparation for the dissertation, you will be asked to complete a research proposal (this is on the VLE in the Dissertation section), which you will discuss with your tutor, gaining their agreement for you to continue to the ethical review process. You must submit an ethical review form online, via your Sussex Direct site (Under the Research tab). You will also, typically, present your initial research proposal to your peers in a seminar, gaining their additional feedback, before starting your research. There is an Ethics section on the VLE that will give you detailed guidance about how to apply for ethical approval via the Sussex Ethical Approval system. This includes exemplar letters of consent and other documents that you need to send to participants and gate-keepers, for example, Head Teacher, Head of Department, Parent, Student, in a school or other institution in which you want to do empirical research.

Dissertation reports will include an Introduction and rationale for the study, a discussion of your Research Design, methodology and methods, Presentation and analysis of your data, Discussion of findings, exploring any limitations of the project, and Conclusions. Detailed guidance for this assignment is provided on the VLE with exemplars from past students. Further support for writing the dissertation is provided at the annual Teacher Researcher conference, at which you will have an opportunity to present either a finished project or work in progress, with your peers on the MAE. This oral rehearsal of your ideas and findings with the opportunity for feedback from peers and tutors is an excellent support for your writing the dissertation afterwards.

<b>Generic Criteria for Masters-level courses, Education APPENDIX 2</b>				
<b>CRITERIA</b>	<b>DISTINCTION</b>	<b>MERIT</b>	<b>PASS</b>	<b>FAIL</b>
<b>Generic Criteria</b>	<b>Distinction: 70-100</b>	<b>Merit: 60-69</b>	<b>Pass: 50-59</b>	<b>Fail: 0-49</b>
<b>1. Knowledge and Understanding</b>	Excellent up-to-date knowledge and deep understanding	Good level of relevant and up-to-date knowledge and understanding	Acceptable, relevant knowledge and understanding	Little or no knowledge or understanding
<b>2. Application, evaluation and reflection</b>	A sophisticated ability to: apply knowledge across contexts; critically evaluate or reflect on literature/ evidence/ policy/ practice/experience	Good ability to: apply knowledge across contexts; critically evaluate or reflect on literature/ evidence/ policy/ practice/experience	Able to: apply knowledge across contexts; critically evaluate or reflect on literature/ evidence/ policy/ practice/experience	Unable to: apply knowledge across contexts; critically evaluate or reflect on literature/ evidence/ policy/ practice/experience
<b>3. Enquiry and problem solving</b>	Designs, conducts and evaluates enquiry or problem solving with insight and sophistication  Unusual professional or academic value/ contribution to learning/ solving problems	Designs, conducts and evaluates the process of enquiry or problem solving well	Able to design and conduct an enquiry or solve problems	Unable to design or carry out an enquiry or solve problems

<b>4.Argument with reasoned conclusions</b>	Original argument and well substantiated conclusions which make an original contribution.	Good argument made with a number of reasoned and substantiated conclusions	Basic argument made with a few reasoned conclusions	Incoherent argument and lacking reasoned conclusions
<b>5.Written expression and academic conventions</b>	Very clear written, easily readable, with consistently correct use of language and academic convention.	Consistently well written, good use of language and academic convention	Generally well written with a small number of linguistic or convention errors	Consistently weak spelling punctuation, grammar and inadequate application of academic convention.