

Ed Macaulay

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FACULTY EXPERIENCE

Since 2023: Lecturer in Physics & Data Science

Queen Mary University of London, School of Physical & Chemical Sciences

– Module Organiser for Professional Software & Career Practices.

Topics include version control, unit testing, and continuous integration.

– Module Organiser for Electromagnetic Waves & Optics.

Topics include polarisation, interference, and geometric optics.

– Referee for Monthly Notices of the Royal Astronomical Society

– Examiner for MSc Digital & Technology Solutions Degree Apprenticeship.

– Academic advisor for Physics foundation year students.

2021 to 2023: Lecturer in Foundation Year (Physics)

University of East Anglia, Faculty of Science – Physics

– Module Organiser for Introductory and Further Physics courses.

– Student Partnership Officer on Staff-Student Liaison Committee.

– Academic Advisor for undergraduate physics students.

– Member of physics Teaching Committee and Exam Board.

– Examiner for final-year undergraduate research projects.

2019 to 2020: Assistant Professor of Physics & Astronomy

University of North Georgia, Department of Physics & Astronomy

– Lectured on mechanics, electromagnetism, relativity, quantum physics, and astronomy.

– Supervised lab courses on algebra & calculus-based physics, and Solar System astronomy.

– Co-instructor of physics teaching pedagogy course.

– Leader of cosmology & relativity extracurricular student study group.

– Published study of supernova lensing with the Dark Energy Survey.

POSTDOCTORAL EXPERIENCE

2016 to 2019: Senior Postdoctoral Research Associate

University of Portsmouth, Institute of Cosmology & Gravitation

– Measured Hubble's Constant with supernovae in Dark Energy Survey.

– Contributed to cosmological analysis of super-luminous supernovae.

– Represented postdocs on the departmental Athena SWAN committee.

– Supervised work-experience projects for visiting A-level students.

– Contributed to successful consolidated grant application.

2014 to 2016: CAASTRO Postdoctoral Research Fellow

University of Queensland, School of Mathematics & Physics

– Modelled & detected effects of gravitational lensing and peculiar velocities on supernovae.

– Developed cosmology analysis of supernovae in the Dark Energy Survey.

– Supervised undergraduate projects on cosmology research and virtual reality outreach.

– Guest lecturer for honours cosmology course (inflation, the CMB and nucleosynthesis).

– Examiner for final year honours reports and oral exams.

– Achieved permanent builder status with the Australian Dark Energy Survey.

2012 to 2014: Fulford Junior Research Fellow

University of Oxford, Somerville College & Department of Physics

- Published first evidence of tension between galaxy redshift and Planck CMB measurements.
- Forecast the performance of cosmological survey with the WEAVE spectrograph.
- Reviewed applications and interviewed students for undergraduate admission.
- Contributed forecasts to successful consolidated grant application.
- Tutored students for General Relativity & Cosmology course (Queen's College).

EDUCATION

2008 to 2012: DPhil in Astrophysics, University of Oxford

- Measured the dark matter power spectrum from peculiar velocity measurements.
- Assisted with commissioning of the FMOS spectrograph on the Subaru telescope.
- Instructed and assessed first year physics undergraduate coding projects.
- *Thesis*: 'Cosmology with Power Spectrum Measurements from Galaxy Surveys'
<http://ora.ox.ac.uk/objects/uuid:bb918260-6747-4133-bdcb-b393d080c6fa>

2004 to 2008: MSci in Physics, Imperial College, London

- Analysed detector qualification during summer research placement at LIGO, Caltech.
- Represented undergraduate student concerns on the faculty-student committee.
- *Thesis*: 'Probing the Early Universe With Luminous Quasars'
www.ed-macaulay.com/Macaulay_MSci_report.pdf

TEACHING FEEDBACK (QMUL)

'Very enthusiastic in ensuring students understand concepts.'

'The lecturer is very nice and cares about the students.'

'Interactive lectures, passionate and down to earth lecturer'

'lecturer interested in presenting real world applications of concepts to students'

'Ed is very keen on answering questions and very personable which is nice .'

'I like the interactive nature of the course'

'ed is very supportive and he has to continue doing what he's doing'

'I honestly enjoy this module and Ed is great'

'its been the most interesting and useful module so far' 'Ed is my fav :))'

'ed is really sweet and kind and treats us really well. his lectures are good and we cover a wide range of topics'

'The module is very fun and easy to follow'

TEACHING FEEDBACK (UEA)

'I enjoy the module a lot, Edward is an amazing lecturer.'

'His enthusiasm and love for physics is visible and I've enjoyed every lecture.'

'Ed was by far my best lecturer.'

'I really love the lectures as they're very informative and fun, I sometimes find myself at the end of the lecture wanting to keep going with the lecture as it is so fun and engaging.'

'Assistance on questions has been great, PointSolutions is also fun and engaging'

'Ed is a great lecturer'

'Ed is very helpful'

'Explanations are great. Easily understood.'

'I thought the way that velocity, acceleration, displacement etc was taught was very good. By linking them all together I was about to understand how the equations are all linked without having to memorise lots of equations. I also really like the interactive quiz during lectures.'

'I found the engagement of the lectures very useful'

'The lecturer was really helpful and he showed me sites that I can access to help me. '

'Thank you so much for teaching me this year, you did a great job explaining the concepts and talking through the Maths.'

'Thank you very much for all the lectures this year, I have really enjoyed them!!'

'I've had the pleasure of having you as my lecturer for Introductory Physics and Advanced Physics. I just wanted to say thank you for all your help and teaching over the past year. You made the course very enjoyable and engaging and I always looked forward to your lectures. I'm very grateful that thanks to all your help this year, I'll be able to progress on to a BSc Maths and eventually achieve my goal of becoming a teacher. Thank you.'

TEACHING FEEDBACK (UNG)

'Dr. Macaulay wanted the entire class to succeed. He was willing to sit down with you and help you for however long it took to understand something. He is a great professor who cares very much for his students.'

'The lectures were intriguing and the instructor included real life applications of the material learned in class.'

'This is Dr. Macaulay's first time at UNG, and puts forth interesting concepts and ideas. He seems to care about his students, and he seems to want us to succeed. He makes assignments manageable and interesting. He had a good attitude and cares about the subject.'

'He tried to thoroughly explain the concepts during our time on tophat. He was always willing to help if we were confused.'

'It was a lab course, and he made the class fun and interesting'

'Dr. Macaulay was great one on one. If you asked him a questions during the lab, he was great at helping you reach a solution. He was also good at encouraging students to think critically.'

'He is very interested in the subject and excited to teach about it. He always tries his best to help and answer any questions you may have.'

'The instructor is very good teaching one on one, and they are very passionate about the subject.'

'He wants students to succeed.'

'He was always willing to help out if we had questions.'

'I think that Dr. Macaulay has good ideas and wants to try and relate physics to real life. The in class homeworks are helpful and the study guides for exams are also helpful.'

'There is no doubt that this professor is knowledgeable in the material and well qualified, his use of work sheets and working out problems on the board.'

'This professor always asked if we had any questions and made sure that we understood the material before we moved on.'

'He was good at making us think more critically about a problem'

'The homework and study guides were super helpful.'

'Using practice tests were very helpful as well as the in class homework!'

'The assignments in the form of worksheets was very good practice.'

'He was very nice.' 'Approachable' 'very accessible for students.'

'He uses many examples and shows all steps when working out problems.'

'He was good at explaining the materials.'

'Activities were to the point and accurately portrayed the point of the lecture.'

'The instructor made sure to help everyone who was in need, and made it a point to actually get to all of the students in a timely fashion.'

'He was accessible to students through email and during the lab.'

'He described the math very well. The top hat presentations and questions were the most useful thing that was presented in this course. He has the ability to explain the math and the reason behind the lab in an easy way that we can all understand. He was able to answer any questions that we had in lab.'

OUTREACH FEEDBACK

'Very interesting guest & topic!! He is very good in explaining the complex ideas'

'You presented the material in an understandable form that most all could grasp ... it was obviously appreciated and well received. Your presentation style showed you have great passion for your subject ... a most endearing quality indeed!'

'Fantastic. Very informative, well presented, interesting & easy to follow. More please!'

'This was a superb discussion. Ed's explanatory style is quite impressive'