

DEPARTMENT OF PHYSICS & ASTRONOMY

Teaching and Learning:

**Opportunities for Postgraduate Students and
Postdoctoral Staff**

Academic Session 2022-23

1 SUMMARY AND APPLICATION PROCEDURES

Postgraduate students and postdoctoral staff make an invaluable contribution to the Department's teaching and learning and are much appreciated by our undergraduate students. Contributing to the teaching and training of future scientists is a deeply rewarding experience: the questions posed by our undergraduates can cause you to think more deeply about all sorts of areas of science, particularly those that you thought you understood!

Applications are invited from postgraduate students and postdoctoral staff who wish to be considered for a range of teaching and learning opportunities within the Department of Physics & Astronomy at UCL. Typical activities are demonstrating in the undergraduate laboratories or computing sessions, and co-supervising projects or problem-solving tutorial classes. Training and guidance will be given by the course or activity organiser.

If you have not already done so, you may be required to take a short (3 hour) introductory course (Arena Gateway) that is designed to introduce you to approaches to teaching and learning and prepare you for your teaching responsibilities.

Current details of UCL's covid-19 policies can be found on the [Coronavirus \(Covid-19\) information pages](#).

Please note also the updated Post Graduate Teaching Assistant (PGTA) [Code of Practice](#).

1.1 Postgraduate teaching assistants (PGTAs)

Postgraduate (PhD) research students are welcome to apply for our teaching and learning roles through our post graduate teaching assistant (PGTA) programme.

Students funded by UKRI should note the [UKRI Training Grant Guidelines](#), which state that: *"Students may undertake teaching or demonstrating work when this is compatible with their training and provided that this is approved by their Supervisors. The total time spent (including preparation and marking) should not interfere with the progress of the doctorate. The amount of time is at Your and the Supervisor's discretion, but it is recommended that this is no more than six hours in any week. It must not be compulsory and must be paid for at Your usual rate and supported by appropriate training. Costs for demonstrating or teaching must not be taken from the Training Grant."*

There is also some useful general guidance on the page [UCL HR Postgraduate Teaching Assistant Code of Practice](#). Please note that students cannot be employed on any programme or module on which they are currently registered as a student ([UCL Academic Manual](#)). If you have other questions, please consult with our Departmental PGTA team, email: physast_pgta@ucl.ac.uk

1.2 *Postdoctoral research fellows (PDRFs)*

We usually ask that postdoctoral research fellows (PDRFs) in the Department undertake some teaching and/or demonstrating work, including associated training, preparatory, marking and examination duties.

This will typically be a commitment of around 60 hours per academic year, depending on your funding mechanism. This requirement is well below the upper limit of 6 hours per week, set by the research councils, and should therefore be workable within most PDRA's own timetable.

Please note that if you hold a Tier 2 visa there may well be restrictions on taking additional paid work. Please find additional information at the [Skilled Worker Visa page at gov.uk](#).

Contractual enquiries for postdoctoral staff should be directed to our Senior HR Administrator, Bonita Carboo (b.carboo@ucl.ac.uk).

1.3 *Application Procedures*

If you wish to apply to be considered for one of our Teaching and Learning roles, please complete the following online form:

TO APPLY:	UCL Department of Physics & Astronomy: Teaching and Learning Opportunities for 2021/22.
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Applications are welcome at any time throughout the year, but all applications received by 14 September 2022 will be treated equally. **Please note you cannot be considered for any paid employment within the Department until you have applied, been accepted and completed all the necessary paperwork to allow you to do so.**

Please see [UCL Guidelines on Data Protection](#) for details of our commitment to protecting the privacy of your data and General Data Protection Regulation (GDPR).

Further information:

- a. **Right to Work** - Note that a Right to Work check will need to be carried out before you are able to commence work. You will not be able to carry out any work until we have seen and verified this. Please see [UCL Right to Work Information and Guidance](#) for further details.
- b. **Contracts** - Successful applicants will usually be issued with a contract in line with [Guidance on UCL Contracts of Employment](#).
- c. **Students on Tier 4 visas** – You are able to apply for these roles but need to be aware of the working rights attached to their visa. Please see [Student visas](#) for further information.

Students on Tier 4 visas who are studying in the UK are able to undertake paid/unpaid work, but are limited to the number of hours (**20 hours maximum**) that they can work in a rolling 7-day period (Monday to Sunday).

While responsibility to ensure visa compliance lies primarily with the student worker, UCL as an employer also have a responsibility when allocating work to student workers on Tier 4 visas and in monitoring how much work is being undertaken.

It is vital that both our Tier 4 student workers and UCL can demonstrate compliance with the visa regulations set by UKVI. The consequences for anyone found to be breaching the working hour restrictions are severe (possible revocation of visa for the student worker, and fines for the Department up to £20,000).

To mitigate the risk of any student being allocated or working more than their allowed hours, UCL has developed timesheets to increase the ability of UCL to monitor compliance. Tier 4 students will therefore need to:

- Complete a weekly time sheet, detailing hours worked.
- This must be signed off by the coordinator who allocated the work to you to show that they confirm the hours worked
- This will then need to be submitted to our PGTA team (physast_pgta@ucl.ac.uk). These are then arranged through the UCL MyHR and you will be paid via the BACS system directly into your bank account.
- Please contact physast_pgta@ucl.ac.uk if you have any queries on this process.

- d. **Payment** - Payment will be received as appropriate on an as and when basis for work carried out during the academic year. As with all UCL payroll payments, you will be paid retrospectively, i.e. you will receive payment the month after submission of a payroll request to pay you.

Note that the spine point and salary for demonstrating is usually at Grade 6, point 21 (£16.13 per hour, 2022/23).

Further details are available at [UCL Salary Scales](#).

- e. **How to ensure that you are paid** - Please note that you cannot commence work with the department until we have established your right to work and a contract has been set up for you. Please see [Guide to Right to Work Checks](#) for more information.

- If you have worked before the date your contract has commenced, you will not be paid for the work.
- In order for a contract to be set up for the current academic year (October 2022 – September 2023), you will need to provide the following:
 - **Passport:** We need to see your passport, to verify your right to work in the UK. It is anticipated that this will be in-person; however, in the case of further social distancing restrictions we may be able to do

this online via Microsoft Teams. More information is available at [UCL Coronavirus HR policies and guidance](#). If you do not have a passport, other forms of ID are acceptable. Please see [Guide to Right to Work Checks](#) for more information.

- **Bank account details:** You will need to complete a Bank Account Details form. Note that you will need to do this even if you have submitted your bank account details on Portico as payroll uses an entirely different system to Portico where stipend payments are made.
- **Tax exemption form:** If you wish to claim exemption from tax (because you will be earning less than the threshold of *circa* £4,500pa), you should complete the starter checklist: which can be found at [Starter checklist for PAYE at gov.uk](#). It is important that you complete it fully and provide your National Insurance Number . If you do not already have a National Insurance Number, details on how to obtain one are available at [Applying for a National Insurance Number at gov.uk](#).

2 PERSON SPECIFICATION

Please see details in the job description document.

3 TRAINING AND DEVELOPMENT

- Prior teaching experience is not necessary.
- Before undertaking any teaching within the Department of Physics and Astronomy, post-holders must have:
 - Completed the mandatory UCL [Diversity training package](#).
 - Completed the [UCL Arena Gateway](#) training.
 - Attended the **Physics & Astronomy Teaching and Learning Day on Friday 16 September** (this will be recorded and made available on the “PHAS LTS: Physics and Astronomy Learning and Teaching Space” moodle page for anyone unable to attend on the day).
 - Additional mandatory module and task specific training will be provided to post-holders by the module or scheme coordinator.
- In addition to these mandatory requirements, the following optional training sessions are available, and we encourage all PGTAs to take advantage of these opportunities:
 - **Physics and Astronomy PGTA teaching development workshop:** PGTAs are also encouraged to attend this optional 1.5 hour teaching development workshop run by Joe Frost-Schenk. Its aim is to improve practice and boost teaching confidence of PGTAs delivering workshops or tutorials in Physics. It will be especially useful for those new to teaching, but all are encouraged to attend. The workshop will discuss some techniques to make your tutorials engaging, whilst also considering the development of independent learners in a Physics context. We will also discuss some scenarios and good practice.

*This session will run in the first week of term 1 at a time to be decided.
Another session may run before the start of term 2.*

Please contact Joe Frost-Schenk by email j.frost-schenk@ucl.ac.uk for further information and to sign-up.

- In addition to the mandatory Arena Gateway training, we encourage all PGTAs to complete the UCL Arena One scheme, which is a development pathway for postgraduate students leading (optionally) to the submission of an application to become an Associate Fellow of the Higher Education Academy.
- Further general information is available on moodle on the “PHAS LTS: Physics and Astronomy Learning and Teaching Space” page.

4 JOB DESCRIPTIONS & CONTACTS

Please see the separate job description and person specification. We are likely to have teaching opportunities available on the following modules—you can view the UCL [module catalogue](#) for a description of the module and module leader contact details. Academic-related queries (as opposed to contract/finance related queries that should be sent to the PGTA team, physast_pgta@ucl.ac.uk) can be directed to the Deputy Director of Teaching, [Steven Schofield](#).

LECTURE MODULES:

PGTAs/PDRFs on these modules will typically be running tutorials or workshop for groups of up to 35 students, assisting with the running and moderation of sessions, engaging with Moodle forum discussions, and providing feedback to students. One additional hour is paid for each face-to-face hour [e.g., (1 hour PST + 1 hour preparation) x (3 PSTs per week) x (4 weeks) = 24 hours.] One additional preparation hour is also provided for PSTs per week, making a total of 28 hours. Modules typically also involve some amount of marking, either ICA or problem sheets. The tables below list the modules available, the number of PGTA/PDRAs required and estimates of the number of hours (per PGTA/PDRA) required for demonstrating and/or marking. The module lead is also listed – ***please see the UCL [module catalogue](#) and contact the module lead directly to discuss details of the module.***

A list of available modules starts on the following page.

TERM 1 LECTURE MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0002	Mathematical Methods 1	3	56	10	Stan Zochowski
PHAS0004	Atoms, Stars and the Universe	3	28	10	Ryan Nichol / Ofer Lahav
PHAS0010	Classical Mechanics	3	56	10	Sergey Yurchenko
PHAS0011	Modern Physics, Astronomy and Cosmology	1	0	10	Ofer Lahav / Richard Ellis
PHAS0021	Electricity and Magnetism	3	28	10	Elinor Ashgrove
PHAS0022	Quantum Physics	3	28	10	Andrew Green / Robert Thorne
PHAS0025	Mathematical Methods III	3	56	10	Matthew Wing / Jon Butterworth
PHAS0026	Mathematical Methods for Theoretical Physics	1	56	10	Arijeet Pal
PHAS0036	The Physics of Stars	1	0	60	Silvia Zane
PHAS0038	Electromagnetic Theory	3 (1)*	0 (28)	60 (0)	Nick Achilleos
PHAS0042	Quantum Mechanics	3 (3)**	0 (12)	60 (48)	Dan Browne / Tania Monteiro
PHAS0047	Astronomical Spectroscopy	1	28	10	Jonathan Rawlings
PHAS0049	Theory of Dynamical Systems	1	0	60	Frank Deppisch
PHAS0057	Physics of the Earth	1	0	60	Anasuya Aruliah
PHAS0065	Galaxy Dynamics, Formation and Evolution	1	5	40	Ralph Schoenrich
PHAS0069	Advanced Quantum Theory	2	0	45	Carla Figueira De Morisson Faria
PHAS0072	Particle Physics	2	0	40	Gavin Hesketh

*PHAS0038 requires 3 PGTAs for marking-only roles (60 hrs) and 1 PGTA for a demonstrating-only role (24 hrs).

**PHAS0042 requires a mixture of PST leaders, PST assistants, and markers. Please discuss the role with the module leads before applying..

TERM 2 LECTURE MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0005	Waves, Optics and Acoustics	3	28	10	Peter Doel / Jasvir Bhamrah
PHAS0006	Thermal Physics and the Properties of Matter	3	28	10	Louise Dash / Steven Schofield
PHAS0009	Mathematical Methods II	2	56	10	Agapi Emmanouilidou / Benjamin Joachimi
PHAS0018	Astrophysical Processes: Nebulae to Stars	1	0	10	Jonathan Rawlings
PHAS0023	Atomic and Molecular Physics	3	28	10	Alexander Shluger / David Cassidy
PHAS0024	Statistical Physics of Matter	3	28	10	Bart Hoogenboom
PHAS0027	Environmental Physics	2	8	40	Ruben Saakyan
PHAS0037	Physical Cosmology	1	28	16	Hiranya Peiris / Jason Sanders
PHAS0040	Nuclear and Particle Physics	3	10	30	Andreas Korn / Matthew Wing
PHAS0041	Solid State Physics	2	20	60	Pavlo Zubko
PHAS0046	Interstellar Physics	1	0	20	Mihkel Kama
PHAS0050	Climate and Energy	1	0	60	David Waters / Chamkaur Ghag
PHAS0055	Materials and Energy Materials	1	0	40	Jochen Blumberger
PHAS0058	Physics of Advanced Materials	1	0	40	Monika Szumilo
PHAS0061	Advanced Topics in Statistical Mechanics	1	0	60	Robert Thorne / Andrew Green
PHAS0067	Advanced Physical Cosmology	1	0	60	Andrew Pontzen
PHAS0068	Physics of Exoplanets	1	0	20	Giovanna Tinetti
PHAS0070	Quantum Computation and Communication	2	30	30	Sougato Bose
PHAS0099	Molecular Physics	1	0	40	Mark Buitelaar

LABORATORY MODULES:

- Experimental Lab modules at Gower St (PHAS0007, PHAS0008, PHAS0028, PHAS0029, PHAS0051)

PGTAs/PDRFs on these modules will typically be demonstrating in practical laboratory sessions, assisting, and advising students, giving feedback, as well as engaging students with online resources. The module lead is also listed – ***please see the [UCL module catalogue](#) and contact the module lead directly to discuss details of the module.***

TERM 1 LABORATORY MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0007	Practical Physics and Computing 1 (Laboratory)	10	45	15	Jasvir Bhamrah / Robin Perry
PHAS0011	Modern Physics, Astronomy and Cosmology (practical)	4	7	10	George Giannopoulos
PHAS0028	Practical Physics 2A	8	40	0	Daven Armoogum / Monika Szumilo
PHAS0051	Experimental Physics	10	60*	0*	Nick Nicolaou

*Some flexibility of hours are required for PHAS0051. Please discuss requirements for this module with the module lead before applying.

TERM 2 LABORATORY MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0008	Practical Skills 1P	12	40	0	Neal Skipper
PHAS0029	Practical Physics and Computing 2 (Laboratory)	12	40	0	Monika Szumilo / Paul Bartlett
PHAS0052	Physics Group Project	1	0	20	Thanh Nguyen
PHAS0054	Practical Physics 3 (For Natural Sciences)	1	50	10	George Giannopoulos

ASTRONOMY MODULES:

- Practical astronomy at the UCL Observatory (PHAS0003, PHAS0020, PHAS0043)

PGTAs/PDRFs on these modules will typically be demonstrating in practical astronomy sessions, assisting, and advising students, giving feedback, as well as engaging students with online resources. The module lead is also listed – ***please see the UCL [module catalogue](#) and contact the module lead directly to discuss details of the module.***

TERM 1 ASTRONOMY MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0043	Practical Astronomy 1 - Techniques	2	60	15	Stephen Boyle

TERM 2 ASTRONOMY MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0003	Practical Skills 1A	4	60	0	Stephen Fossey
PHAS0020	Practical Astrophysics and Computing	3	30	30	Giorgio Savini

COMPUTING MODULES:

- Python-based computing modules (PHAS0007, PHAS0029, PHAS0030, PHAS0056, PHAS0102)
- Mathematica-based computing modules (PHAS0012)
- C++ computing (PHAS0100)

PGTAs/PDRFs on these modules will typically be demonstrating in computing sessions, assisting and advising students, giving feedback, as well as engaging students with online resources. The module lead is also listed – ***please see the [UCL module catalogue](#) and contact the module lead directly to discuss details of the module.***

TERM 1 COMPUTING MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0007	Practical Physics and Computing 1 (Computing)	20	50	0	Rebecca Chislett / Ben Waugh
PHAS0102	Techniques of High-Performance Computing	2	20	20	Matthew Scroggs

TERM 2 COMPUTING MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0012	Computing for Mathematical Physics	10	30	30	Keith Hamilton
PHAS0029	Practical Physics and Computing 2 (Computing)	10	45	10+10*	Monika Szumilo / Paul Bartlett
PHAS0030	Computational Physics (Demonstrating)	7	45	20 +15**	David Bowler
PHAS0056	Practical Machine Learning for Physicists	7	60	0	Ryan Nichol
PHAS0100	Research Computing with C++ (PHAS0100)	3	40	0	David Perez-Suarez

*~10 hours of final report marking is required for PHAS0029 outside of term time.

** PHAS0030 requires an additional ~15 hours outside of term time to cover additional marking. Please contact the module lead to discuss details before applying.

COMMUNICATION SKILLS MODULES: (PHAS0017, PHAS0035)

PGTAs/PDRFs on these modules will typically be providing feedback to students as well as engaging students with online resources.

TERM 1 COMMUNICATIONS MODULES

Code	Name	Number of PGTAs	Hours	Marking hours	Module Lead
PHAS0017	Developing Effective Communication 1	8	50	0	Alexandra Olaya-Castro