March 2021

FAQ Physics Double Degree

GENERAL

1. What is the Physics Double Degree?

The Physics Double Degree, otherwise known as the Double Degree in Physics and Liberal Arts and Sciences, DDLP for short, is an multidisciplinary programme of study made possible by the collaboration of University College Utrecht (UCU), the pioneer liberal arts and sciences education college in the Netherlands, and the Department of Physics of University Utrecht. On completion you will be awarded two fully accredited bachelor's degrees, a B.Sc. in Liberal Arts and Sciences, awarded by UCU, and a B.Sc. in Physics and Astronomy, awarded by the UU Science Faculty.

2. Who is the DDLP for?

The programme is intended for UCU students interested in combining a Liberal Arts and Sciences education, with more in-depth study of physics.

3. What are the benefits of the DDLP?

By following the DDLP you have 'the best of both worlds'. You will benefit from the broad liberal arts and sciences education offered by UCU and at the same time get first-hand experience of research and the life of a physics researcher in UU. The DDLP smoothens the pathway to postgraduate study options in physics and related areas of research. It also opens doors to the rapidly growing interdisciplinary job market.

4. Is there an entrance exam, or a GPA requirement for acceptance on to the DDLP?

No. Entry is on the basis of the approval of your study plan by the DDLP Programme Coordinator, Dr. Filipe Freire, and the Exam Board at the Physics Department (more information on the study plan below). The minimal requirement is that you pass all the UCU courses listed in **Overview 1** in the DDLP Booklet.

5. What are the recommended Level 1 courses if you plan to do the DDLP?

If you are interested in the DDLP it is strongly recommended that you take the following Level 1 UCU courses in your first year at UCU: UCSCIPHY12 Relativistic and Classical Physics, UCSCIMAT11 Calculus and Linear Algebra, and UCSCIPHY14 Wave Phenomena in Nature – Enhanced. It is also very helpful if you have studied physics and mathematics as part of your secondary school diploma.

6. When do you register for the DDLP?

At the end of your first year at UCU you pre-register your interest in the DDLP with the Programme Coordinator, Dr. Filipe Freire. You also need to register for the appropriate Level 2 courses and lab modules, see the DDLP Booklet. During the first semester of your third year you will need to register as a bachelor physics student at the Science Faculty via Studielink. At the same time, you need to submit your study plan (see next question) to the Exam Board of the Physics Department at UU for their approval.

7. What does the study plan consist of and how is it submitted?

- An application form to become a student in the UU Physics and Astronomy bachelor's degree programme.
- A transcript of all the courses you have completed at UCU, which must include the required UCU Physics and Mathematics courses as per the DDLP Booklet.
- A study overview from Osiris of the physics courses you plan to complete in your third and fourth year.

Note, your study plan has to be first approved by the DDLP Programme Coordinator, Dr. Filipe Freire, f.freire@uu.nl, and then submitted to the UU Physics Exam Board via the UU Physics Student Advisor Geert-Jan Roelofs, Studieadviseur.nast@uu.nl.

8. What is the language of instruction on the DDLP courses?

All UCU courses are in English. The UU Physics courses can be taught in English if requested. If the UU course cannot be taught in English (to date this has only happened with one course, NS-265B Fluid Dynamics and Transport Phenomena), you are assigned a teaching assistant to support you in the course. All your assignments and exams can be written in English.

9. Can you complete other tracks, (e.g. Earth and Environment, Philosophy, Psychology) while following the DDLP?

Yes, following the DDLP will not limit your freedom to follow and complete other tracks. Multidisciplinary education is encouraged. See final page of the DDLP Booklet.

10. How long does it take to complete the DDLP?

We recommend you take four years to complete the DDLP. It can also be completed in 3.5 years but that will limit your possibilities for broader multidisciplinary education.

11. Where does the teaching take place?

All UCU courses take place on the UCU campus. The UCU physics lab modules and Physics Department courses take place at Utrecht Science Park (a 8 minute bike ride from UCU).

12. Is it possible to live on the UCU campus during their 4th year of the DDLP?

This is unfortunately not possible.

COURSES

1. What subjects do you study on the DDLP programme?

As well as studying the required courses for all UCU students, such as Research in Context, and Language and Culture, you will also study Physics subjects e.g. Mechanics, Special Relativity, Wave Phenomena, Electrodynamics, Statistical Mechanics, Quantum Mechanics, and Mathematical Methods for Physicists. It is easiest to use the UU course planner (also available in English) to find out more information about the possible Level 3 courses in the Physics and Astronomy Bachelor's.

2. What is the teaching and learning approach on the DDLP?

At UCU we take advantage of the small student number per class to offer interactive classes, problem solving sessions and guest lectures. For the Level 1 UCU physics courses you will also have access to the innovative MasteringPhysics online platform. This is used alongside the course textbook. The DDLP also includes laboratory courses (see below).

3. Does the DDLP include laboratory courses?

Yes. At UCU you will have an introduction to scientific practices in empirical research and numerical programming in Python, which includes visualization of data. At the UU Physics Department you will follow laboratory modules in Waves and Optics, and Statistical Mechanics. One of the possibilities in your elective courses (NS-267B), at the Physics Department is a research internship where you gain insight into different experimental techniques and simulate methods used in scientific research.

4. How does the laboratory experience in the DDLP compare to 'regular' Physics and Astronomy Bachelors programmes?

The laboratory experience is equivalent. The DDLP students must complete laboratory modules that are done in the same laboratory facilities used by the regular Physics Bachelor's students.

5. Are there elective courses in the DDLP?

Yes. The four Level 3 courses that you complete at the UU Physics Department are all electives (see final page of the DDLP Booklet). At UCU only one Physics track is required. This means that you have freedom to complete your own multidisciplinary curriculum.

6. What is the difference between PHY13 and PHY14, or PHY21 and PHY26?

There are two courses in the UCU Physics Track that are offered in two formats, standard and enhanced format. These are Introduction to Wave Phenomena (PHY13 and PHY14) in Nature and Classical Electrodynamics (PHY21 and PHY26). The main difference, in both cases, concerns depth of understanding and modes of assessment. In the standard format you write an essay about practical applications of wave phenomena, while in the enhanced format you work on a portfolio of more extensive, in-depth problems involving wave phenomena, which require analytical problem-solving skills. The two formats follow the same time schedule.

7. Is it possible to join the DDLP if you have not taken PHY14 (or PHY26) but only PHY13 (or PHY21)?

Yes, it is possible. However, you must complete the portfolio of the enhanced format of the course in liaison with the course instructor. Once completed you need to submit a request to the UCU Exam Board to upgrade your course from 'standard format' to 'enhanced format' on the UCU transcript.

8. Is information about student progress on the DDLP programme visible in Osiris?

Yes. It is possible for students and tutors to see that a student is registered for both the UCU Liberal Arts and Sciences and the Physics and Astronomy Bachelor's degrees programmes in Osiris. It is also possible to see which courses have been completed.

9. What is the arrangement for the Graduation Thesis if you are following the DDLP?

If you are following the DDLP you will write your graduation thesis at the UU Physics Department as a regular Physics Bachelor student (course code NS-310B). This means you need to register for the graduation thesis at the Physics Department by completing the required application form. This thesis will count for both degrees.

10. What are the opportunities for doing research during the DDLP programme?

Your graduation thesis NS-310B will involve doing research. You are also introduced to research methodology in the elective courses/internships, some of which involve undertaking research.

11. Is it possible to do an exchange semester abroad while following the DDLP programme?

Yes. The recommended semester is Spring of your 3rd year. You need to complete a course abroad that is equivalent to NS-265B or NS-266B. This needs to be approved in advance by the UU Physics Department Exam Board. For more information contact the UU Physics Student Advisor Geert-Jan Roelofs, Studieadviseur.nast@uu.nl. Exchange in Autumn of your 3rd year is also feasible. In either case discuss well in advance your plans with the DDLP Programme Coordinator well in advance.

GRADUATION AND POST-GRADUATION

1. Does the DDLP satisfy entry requirements for post-graduate studies in Physics?

With DDLP you can apply to all Master's programmes in Physics at UU and elsewhere in the Netherlands or abroad.

2. What are the opportunities for graduates of the DDLP?

You will have the same opportunities as a regular Physics Bachelor's graduate with the added value of having a Liberal Arts and Science multidisciplinary education. This will broaden the possibilities for post-graduate studies beyond physics after completing DDLP. Possible areas include: Energy and Environment Sciences, Neurosciences, Biophysics, Physical Chemistry, History and Philosophy of Sciences, amongst others.

Is your question not yet answered? Please contact Filipe Freire, f.freire@uu.nl