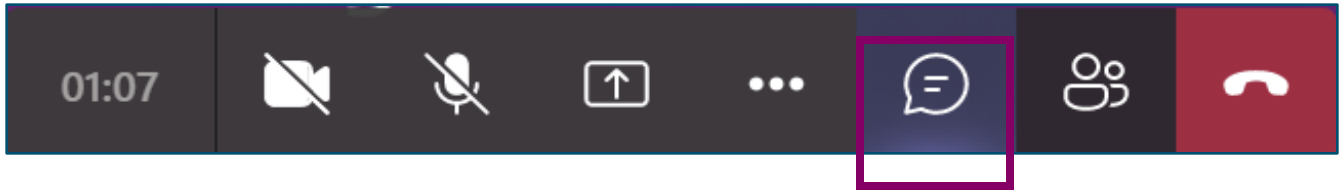
THE UNIVERSITY of EDINBURGH
The Royal (Dick) School
of Veterinary Studies

An introduction to Applied Conservation Genetics with Wildlife Forensics

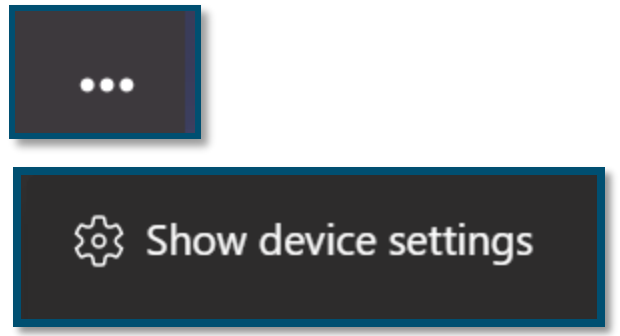
Sílvia Pérez-Espona | 22 May 2025

Audio check

- Can you hear the presenter speaking?
- Please type “**no**” in the Chat area **if you cannot hear the presenter**



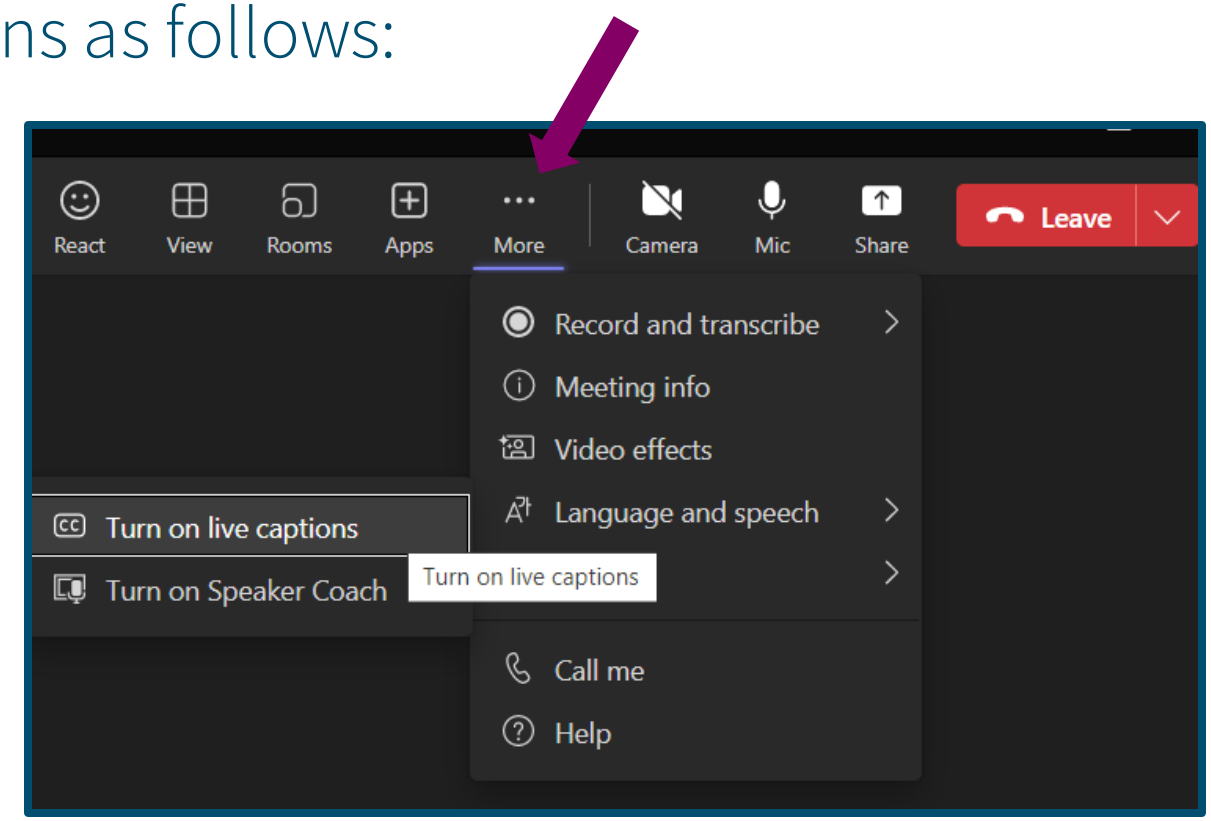
- If you can’t hear:
  - Check your settings by clicking on the three little dots on the options bar and then ‘show device settings’. Here you can check and change your speakers.
  - Try signing out and signing back into the session
  - Don’t worry, the session is being recorded



Live captions

You can turn on automated live captions as follows:

- More > Language and speech > Turn on live captions



These are automated therefore won't be 100% accurate

Recording

- Today's session is being recorded
- Any information that you provide during a session is optional and in doing so you give us consent to process this information
- If you don't want your question or name read out in public, you can email your question to futurestudents@ed.ac.uk
- Please note - a few attendees' names may be visible in the recording, if it is important that your name not be visible in the recording, please exit the session and re-enter using an incognito browser and typing in a pseudonym for yourself
- The session will be stored by the University of Edinburgh and published on our website after the event on a non-indexed web page
- ***You will be emailed with a link to watch the session recording by the end of next week***

THE UNIVERSITY of EDINBURGH
The Royal (Dick) School
of Veterinary Studies

An introduction to Applied Conservation Genetics with Wildlife Forensics

ACGWF Team | 22nd May 2025

Programme Staff

Teaching

Dr Sílvia Pérez-Espona
Programme Director and Coordinator

Dr Lucy Webster
Deputy Programme Director

Prof Rob Ogden
Programme Tutor/Former Director

Dr Emily Humble
Programme Tutor

Programme Staff

Administration

Mr Michael Winpenny
Programme Administrator

Student support

Dr Celeste de Blois
Student Advisor

Digital Education Unit

Mr Brian Mather
Senior E-developer

Ms Charlotte Grisham
E-developer

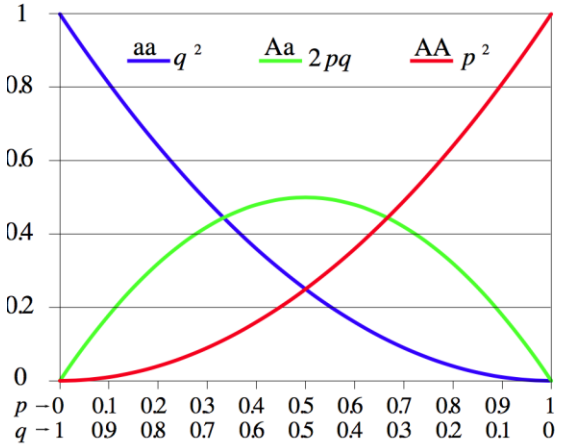
Mr Chris Smith
E-learning assistant

Ms Anna Pan
E-learning assistant

Collaborations

Programme

- This postgraduate provides a blend of **theoretical and practical** education in the application of **genetic data** to wildlife management and conservation law enforcement.
- The overall aim of the programme is to equip current and future wildlife professionals with the **knowledge, skills and global networks** to address modern challenges in conservation management and law enforcement.



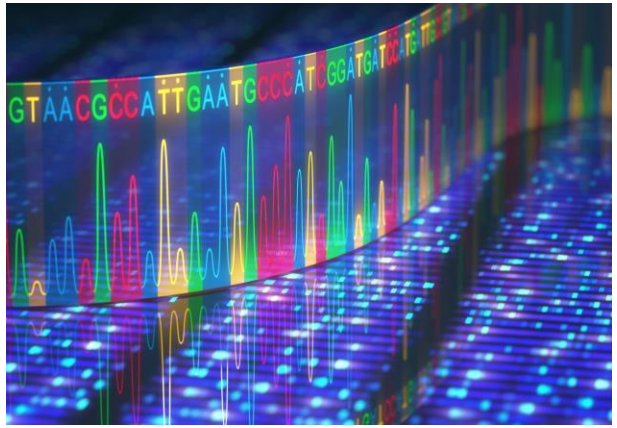


Image from Canva

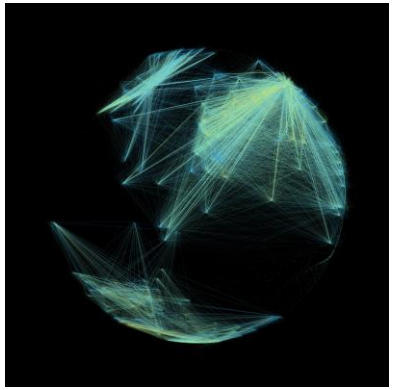
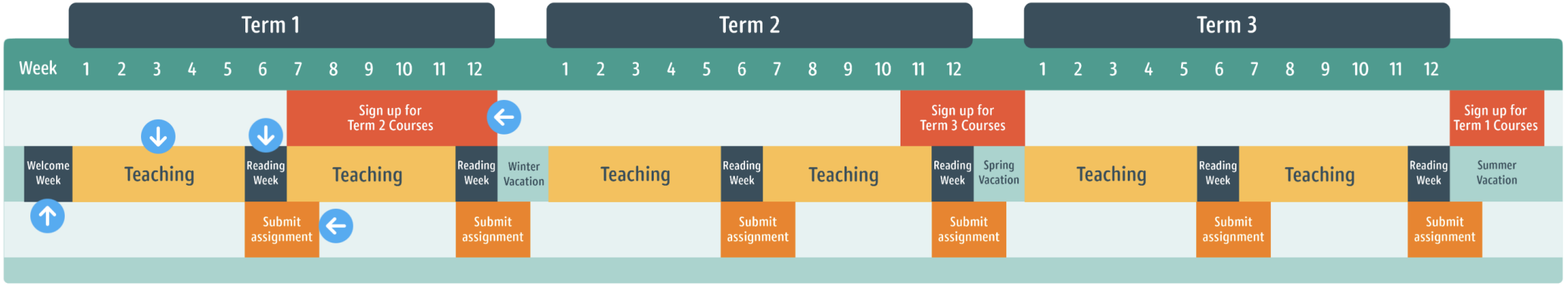


Photo by Mario Verduzco on Unsplash

Modalities of the programme

Master of Science (MSc) 180 credits	3 - 6 years 3 years (if UK loan) Dissertation in 1 year
Postgraduate Diploma (PG Dip) 120 credits	2 – 4 years
Postgraduate Certificate PG Cert 60 credits	1 – 2 years
Postgraduate Professional Development PPD Up to 50 credits	Up to 2 years

Academic year structure for taught courses



10 credit courses (5 weeks of teaching)

1 graded assessment

20 credit courses (10 weeks of teaching)

2 graded assessments

Year 1

Term 1

Essential Population Genetic Theory and Techniques

(20 credits)

Term 2

Introduction to Applied Conservation Genetics - Part 1

(10 credits)

Introduction to Applied Conservation Genetics - Part 2

(10 credits)

Term 3

Introduction to Wildlife Forensics

(10 credits)

Genetic Data Analysis for Conservation Management and Wildlife Forensics

(10 credits)

Year 2

Term 1

Applied Conservation Genetics and Wildlife Forensics

(20 credits)

Term 2

Elective 1

(10 credits)

Elective 2

(10 credits)

Term 3

The Role of Wildlife Genetics in Global Conservation Challenges

(20 credits)

Pre-Dissertation

(no credits)

Year 2 Term 2 Electives

Conservation Genetics

Population Genetics for Conservation Breeding

(10 credits)

Conservation Genetics for Reintroductions, Translocations and Population Monitoring

(10 credits)

Wildlife Forensics

Quality Management in Wildlife Forensic Science

(10 credits)

Reporting Forensic Evidence(10 credits)

Year 3 Dissertation

Experimental project

Photo by National Cancer Institute on Unsplash

Desk-based project

Photo by Lukas Blazek on Unsplash

Year 3 Dissertation examples - experimental

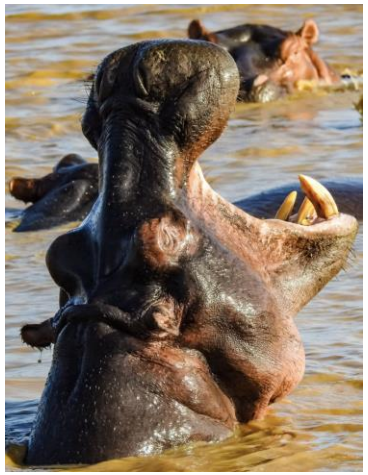


Photo by Aji Vinister Denistan on Unsplash

Tool development for hippopotamus (*Hippopotamus amphibious*) DNA forensics

Photo by naushad mohamed on Unsplash

DNA tools to authenticate trade in CITES listed species: An investigation with Reef Manta Ray and Oceanic Manta Ray

Image from Wikipedia

Ex-situ conservation genetics of the Pancake Tortoise (*Malacochersus tornieri*)

Photo by Y S on Unsplash

Conservation genetics of south Texas canids: using genetic approaches to assess red wolf ancestry and diet selection

Year 3 Dissertation examples – desk-based

Photo by Sercan Jenkins on Unsplash

A Systematic Review of Population Monitoring Studies of Sea Turtles and Its Application to Conservation

Photo by Kartik Iyer on Unsplash

A systematic review of molecular forensic approaches used for identification of species, sex, and geolocation of seized tiger parts

Image from Alex Wild in AntwWki

Landscape and environmental genetics of the army ant, *Eciton hamatum,* in Panama

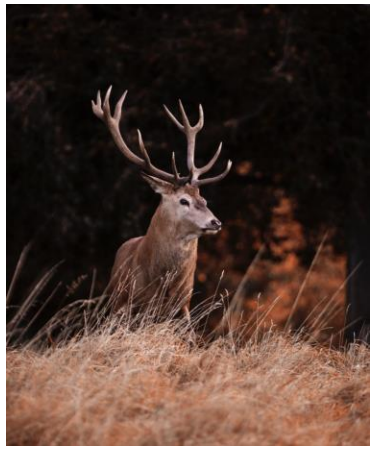


Photo by Diana Parkhouse on Unsplash

Investigating the influence of anthropogenic interference on red deer populations in Landes and Sologne, France

Examples of students' career

Bwalya Chibwe

Zambia
Sweden

Since completing her master's, Bwalya has taken on several different roles in conservation research and practice such as **Programme Manager** to the Mistra Geopolitics and the Centre for Climate Science and Policy Research, and **Global Monitoring System Database Manager** for ECO-SOLVE at the Global Initiative Against Transnational Organised Crime.

Bwalya is currently in doing a **PhD** at Linköping University (Sweden) exploring the role digital technologies in biocultural conservation. As part of her research, Bwalya attended last year the Convention on Biological Diversity COP 16 in Colombia.

Examples of students' career

Claire Delcourt
Luxembourg

Member of Parliament of Luxembourg
Focusing on environmental and agricultural policy

Claire has been working on nature restoration law, biodiversity, food and nutrition policy, animal welfare, PFAS/TFA contamination, GMOs.

She regularly engages with stakeholders, including farmers, researchers, and NGOs, and has been involved in several EU dossiers related to environment and agriculture.

Claire advocates for sustainable, science-based, and resposible solutions.

Examples of students' career

Cordula Walderdoff
Austria

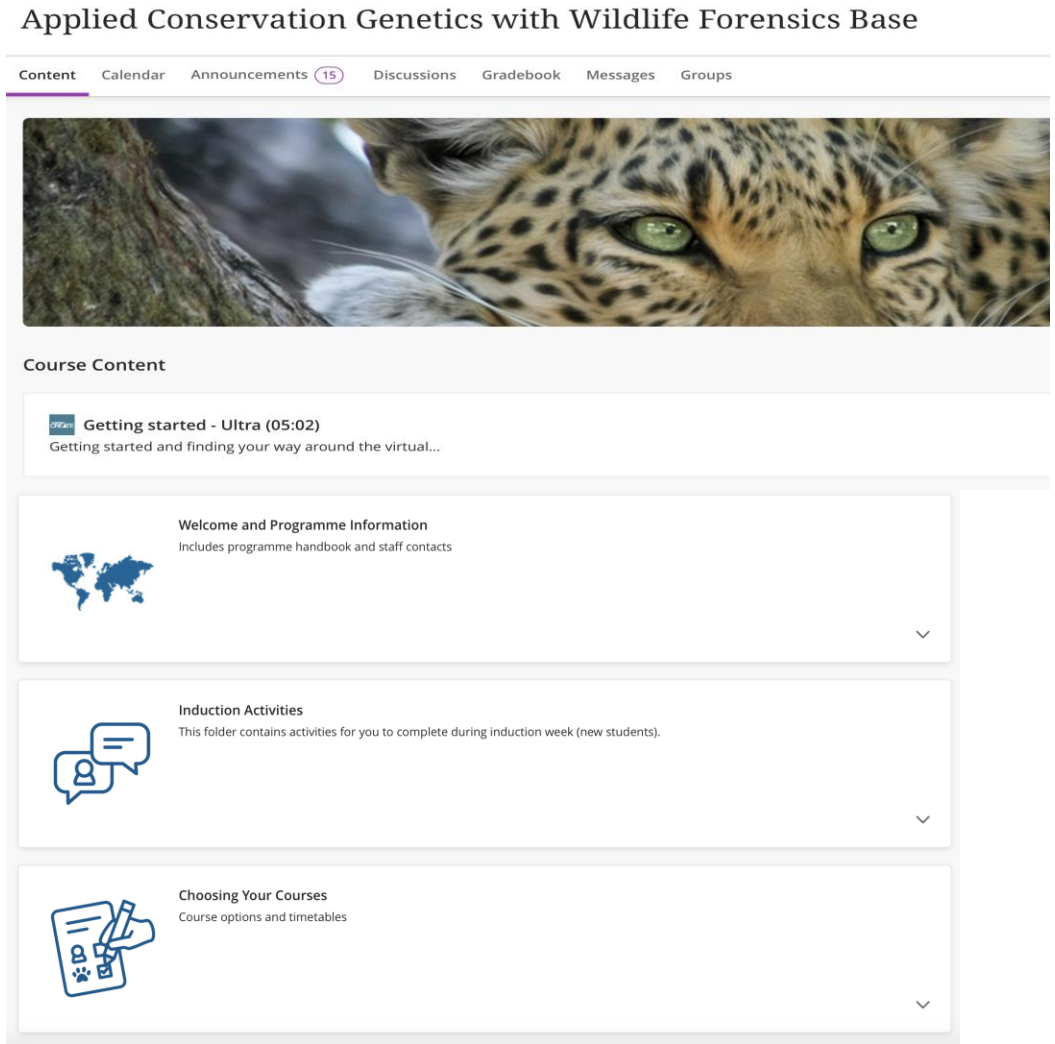
Manager of a forest area at the very steep slopes surrounding the Upper Austrian lake Attersee.

Cordula's job includes traditional economic forestry, management of the forest habitat and wildlife management to prevent wild damage.

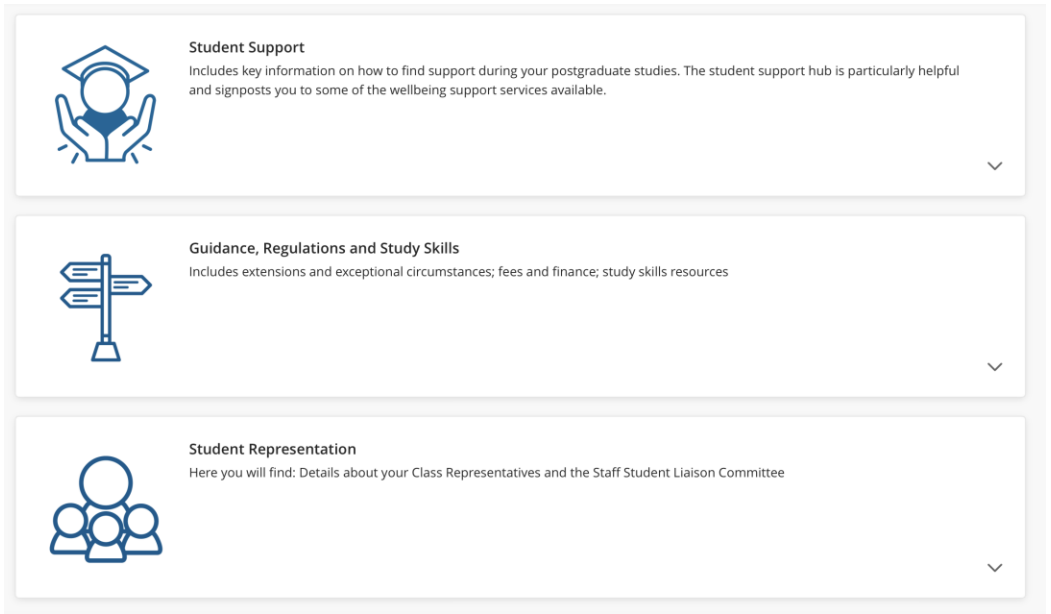
"*I really enjoyed studying for the MSc. The course outline and aims were clear, lectures well resented and good to follow. I enjoyed working on the assignments, which gave me more insight into individual topics.*

My thesis was a very good opportunity to combine my previous experience in remote sensing with my newly acquired knowledge on population genetics."

LEARN Ultra – Virtual Learning Environment



Base course



LEARN Ultra – taught courses

Introduction to Applied Conservation Genetics Part 1 (2024-2025)[SB3]

Content | Calendar | Announcements (7) | Discussions | Gradebook | Messages | Analytics | Groups

Course Information
Includes important course information, learning outcomes, course contacts and help and support. (Click to expand)

Library Resources
Reading list, subject guide, DiscoverEd, and Library services.

Assessment
Includes assessment information and submission dropboxes, where to find feedback, and examples of previous assignments.

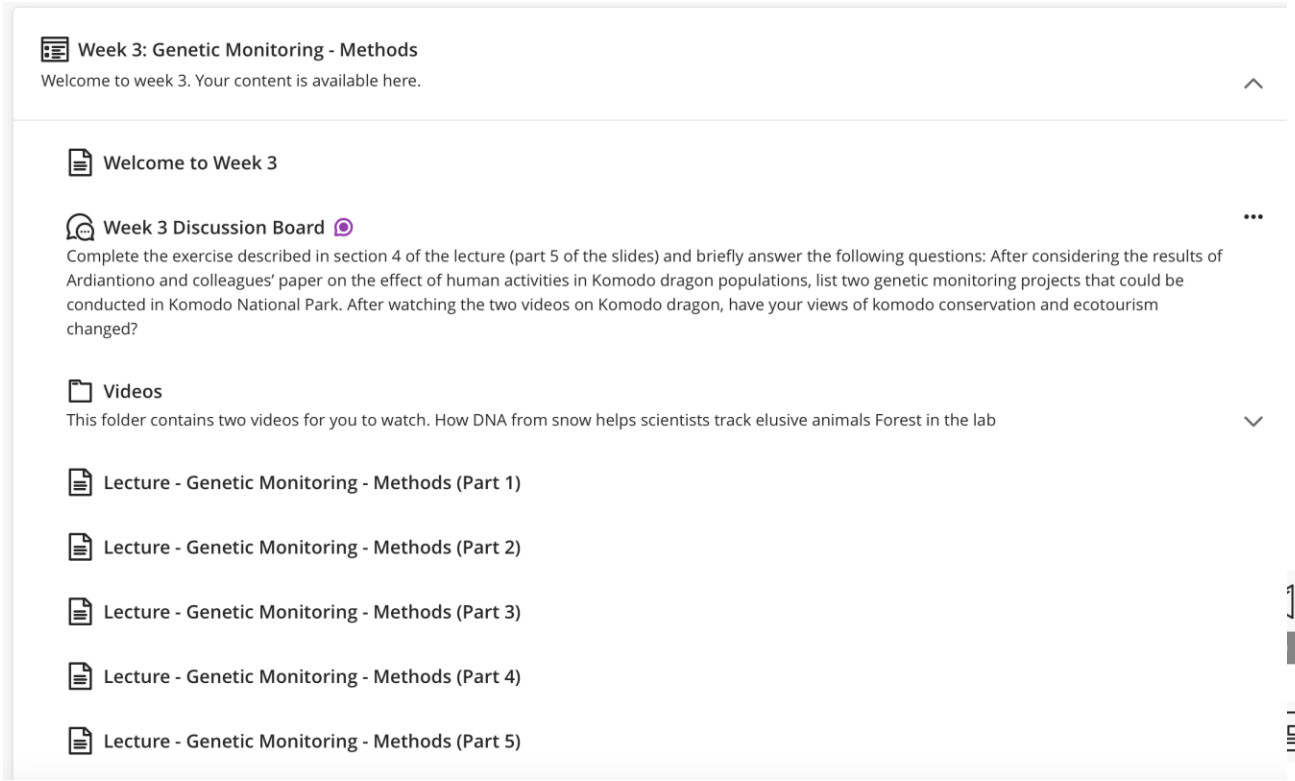
Live Sessions and Recordings
Includes information about your live sessions, where to find the recordings and what the sessions will be on. (Click to expand)

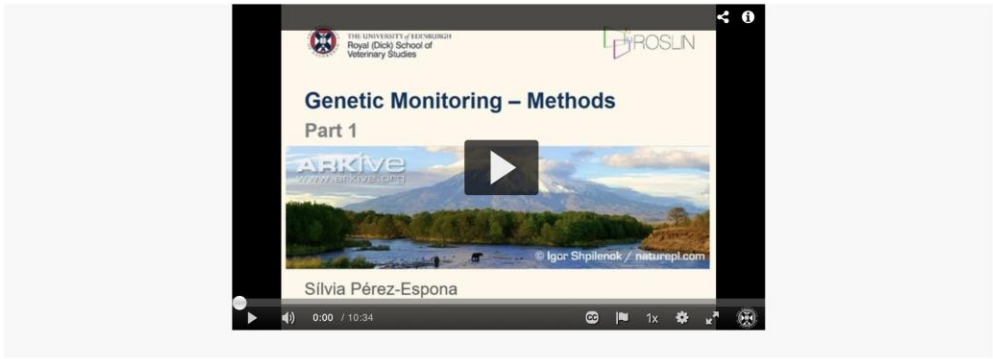
Week 1: Genetics in Conservation Biology
Welcome to week 1. Your content is available here.

Week 6: Reading Week
Welcome to week 6. This is a time for reading and preparing for your upcoming assessments.

Technical Discussion Board
You can use this discussion board to contact the Digital Education Unit if you have any problems accessing teaching resources or require technical support. Answers will benefit all students. So please get in touch.

Weekly learning content example

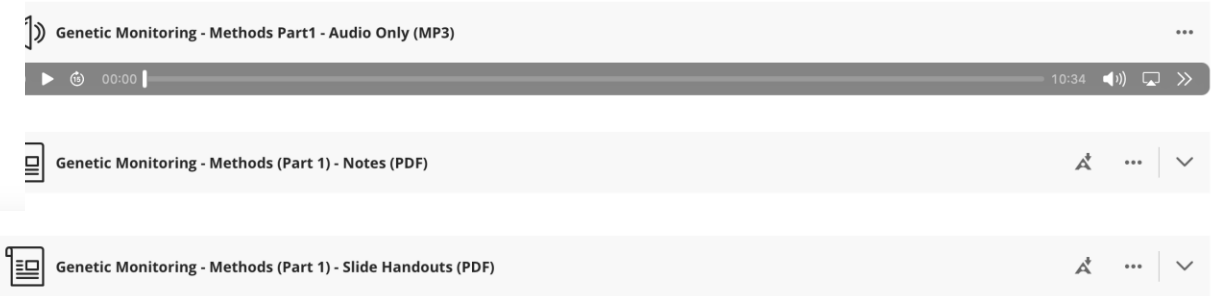




Dr Silvia Pérez-Espona (approx. running time 10 mins)

The MP3 (audio), slides (PDF) and notes (PDF) of the presentation are provided for you to download to your personal computer. Please note that the lecture is interactive and includes a number of **Reflective Points** for you to consider.

View this lecture with subtitles (automatically generated)



Assessment

Assessment and Feedback Information

Assessment details, important dates, where to find feedback, and other assessment information.

Generative AI guidance for students

Please read the guidance on the use of generative AI in assessments. By following the guidance, you will be able to benefit from using GenAI while also reducing the likelihood of engaging in academic misconduct. Please consult your assignment brief and if you have any questions please ask the programme team.

Referencing your work using Harvard

Guidance on the Harvard referencing system.

Exceptional Circumstances Deadlines

Please check this link for the Vet School PGT Exceptional Circumstances application deadline for this course.

Formative Assessment: MCQs (non-assessed)

An open-book multiple choice questions test.

Formative Assessment: Poster Critique (non-assessed)

Includes assessment criteria, submission details and submission dropbox. Deadline: Friday 24th January at 13:00 GMT

Poster critique- formative

Due date: 24/01/2025, 13:00 (GMT) | Formative

IMPORTANT: Please use your EXAM NUMBER as the title of your submission. This keeps it anonymous for the marker and also allows admin to record your submission as received. By submitting this assignment, you indicate your agreement with the OWN WORK DECLARATION.

Assignment: Poster Preparation and Presentation

Includes assessment criteria, submission details and submission dropbox. Deadline: Tuesday 18th February at 13:00 GMT

Assessment Discussion

Ask your questions about the assessment here.

Assessment type examples

Article critique

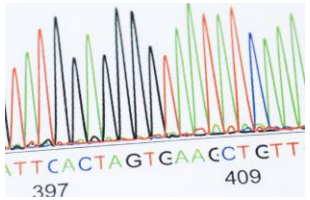
Project plans

Crime scene investigation

Poster preparation and presentation

Group debate and policy brief

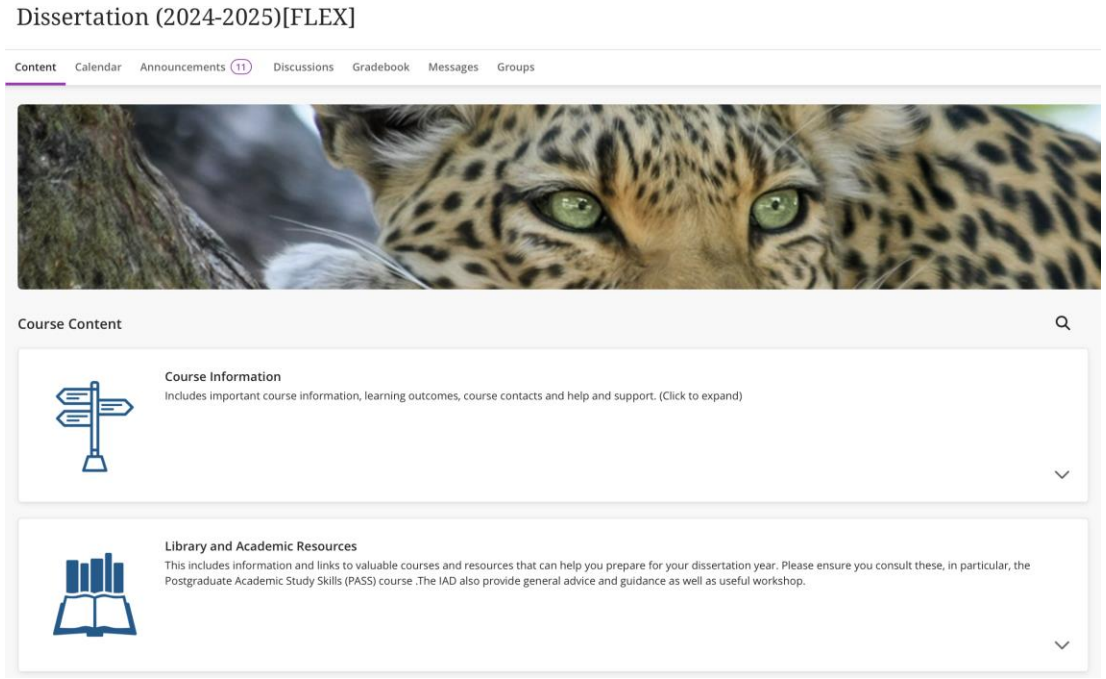
Data interpretation report

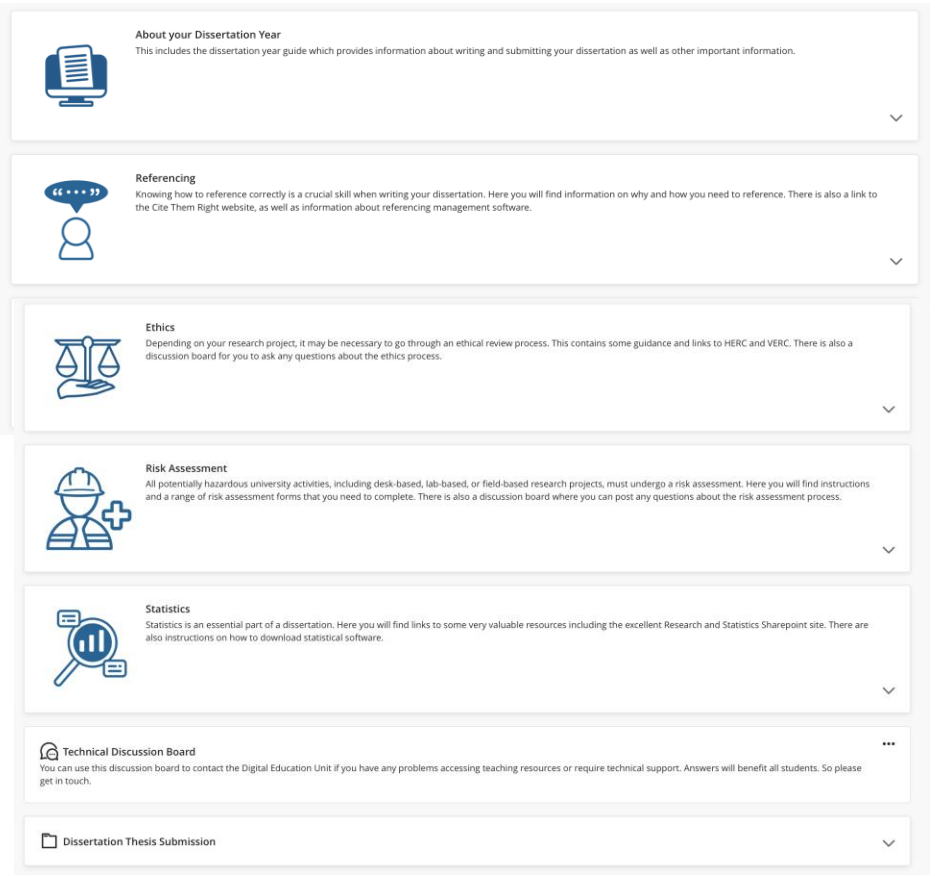


Reintroduction plan

Funding proposal

LEARN Ultra – Pre-dissertation / Dissertation





Fees and costs

Academic Year 2025/6

10 credits £1,065

20 credits £2,125

Annual tuition fee increase

The tuition fee shown in the table is for entry into AY 2025-26 and is for one year only.

Tuition fees increase every year in the majority of cases.

If you intend to study over additional years, you should take this annual tuition fee increase into consideration when you estimate your fees for a degree.

Part-time intermittent study

This mode of study allows you to complete a degree at your own pace.

You will only be charged when you register for each course, based on the number of credits attached to it. This is described as Invoiced at Course Level (ICL).

Our credits are charged in blocks. The price per credit block is listed beside each degree in the table below.

Taking courses from other programmes

If you take a course from another programme while studying, you will be charged the fee attached to that course. This may mean you are charged more than the course fees for your programme.

Funding

UK government loans

If you live in the UK, you may be able to apply for a postgraduate loan from one of the UK's governments. The type and amount of financial support you are eligible for will depend on:

- your programme
- the duration of your studies
- your tuition fee status

Programmes studied on a part-time intermittent basis are not eligible for funding. PG Cert and PG Dip awards are also not eligible. However, our 3-year MSc option should be eligible for funding under most schemes.

- UK government and other external funding

Other funding opportunities

- Online Learning Scholarships Search for scholarships and funding opportunities:
- Search for funding

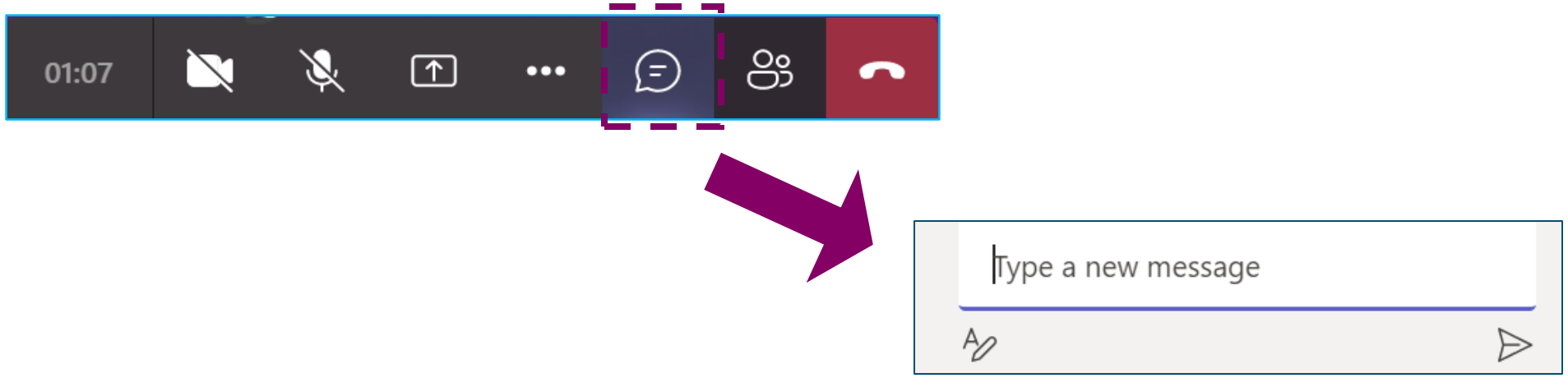
(Revised 9 May 2025 to update UK government loans information)

Search for scholarships and funding opportunities:

- Search for funding

Asking questions

- Type your question into the Chat Area



Contact details for follow-up questions

We apologise if we did not get through all of your questions in the time allotted for this session.

If you have further questions that have not been answered, please email: *conservation.genetics@ed.ac.uk*

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Thank you

The Applied Conservation Genetics Programme Team

conservation.genetics@ed.ac.uk

Professional skills

Project planning & grant writing

Application of emerging technologies

Wildlife genetic data analysis

Wildlife Forensic casework

Genetic data interpretation

Validating methods

Engagement: stakeholders and policy makers

Writing reports and presenting evidence

Academic skills

Sourcing Information

Understanding Data

Providing Feedback

General Resources

Critical Reading

Critical Writing

Presentation Skills

Systematic Reviews

Library – reading lists

Resource List

Access readings for this course:

Resource List

How to use Resource Lists

Video: Resource Lists for Students (4:09)

DiscoverEd

Use DiscoverEd to search the Library's collections and find e-books, journal articles and more.

DiscoverEd

DiscoverEd

Week 3: Genetic Monitoring - Methods (5)

Genetic monitoring as a promising tool for conservation and management

Article Schwartz, Michael K. ; Luikart, Gordon ; Waples, Robin S., Trends in Ecology & Evolution, 22(1), 2007, 25 - 33

Note: Please read pages 25-27 for background information on genetic monitoring methods. Most of the lecture for week 4 will be based on this paper.

Essential

View online • Download article

Complete

The GEO Handbook on Biodiversity Observation Networks

E-book Walters, Michele ; Scholes, Robert J, Cham, Springer International Publishing : Imprint: Springer, 2017

Note: Please read Chapter 5 'Monitoring changes in genetic diversity'

Recommended

View online

Complete

Population genomics for wildlife conservation and management

Article Hohenlohe, Paul A. ; Funk, W. Chris ; Rajora, Om P., Molecular ecology, 30(1), 2021-01, 62 - 82

Further reading

View online • Download article

Complete