At UCL we are proud of our pioneering history, our distinguished present and our exciting future. UCL is a great place to be a student.

World-class: UCL is one of the world's best universities and is consistently placed in the global top 20 in world rankings.

Cutting-edge: Our new programmes include the latest discoveries and developments – so students would be on the cutting-edge. UCL is a world-leader in research, with outstanding results in the 2008 Research Assessment.

Innovation: We are London's Global University – our programmes provide a global perspective to students.

Diversity: Around 35% of our students come from outside the UK, so UCL has a cosmopolitan, friendly and inclusive atmosphere.

Location: We are based in the heart of London – which gives students outstanding academic, professional and social benefits.

How to apply

Entry requirements: Normally a minimum of an upper second-class UK Bachelor's degree in a relevant discipline or an overseas qualification of an equivalent standard. Applicants with no degree but with relevant professional experience will be considered.

You may choose to apply online or download application materials, for details visit www.ucl.ac.uk/gradapps
Why study at UCL IRDR?

The Institute for Risk and Disaster Reduction (IRDR), leads multidisciplinary research, knowledge exchange and advanced teaching across UCL. We have global, national and local recognition, evidenced by international attendance at our annual Humanitarian Summit, our Annual Conference addressed by the UK Government’s Chief Scientific Advisor, and our training of London Resilience’s gold command. As a student, you will be encouraged to join our active seminar series, high-profile public discussion meetings and the networking events we host.

Careers

Whether you wish to start a new career in risk and disaster reduction or you already have the experience we are here to support you. With an MSc or MRes from UCL IRDR, you will have excellent academic credibility coupled with practical and analytical skills.

We run an annual Careers and Opportunities Forum which offers expert and targeted advice, and hosts stalls from a range of employers and headhunters in the field of risk and disaster reduction. We provide entrepreneurship training for students interested in non-traditional careers in disaster preparation, response and humanitarian action.

“My department and lecturers helped me make connections with people … I also attended UCL Careers events that were helpful in terms of giving advice and guidance as well as establishing new contacts.” (IRDR MSc student, 2015-2016)

Some career destinations of recent IRDR graduates:

- Disaster Risk Management Consultant, World Bank
- Project Officer, Global Risk Forum, Davos
- Coastal Risk Management Officer, Environment Agency
- Project Officer, Cairo Local Government
- Field Delegate, Red Cross
- Global Engagement Fellow, Interpeace
- Resilience Technical Officer, International Medical Corps
- Project Officer, Rescue Global
- Emergency Information Management Specialist, Plan Nepal
- Business Continuity & Resilience Consultant, PwC
- Business Continuity Consultant, Arup
- Catastrophe Analyst, Barbican Insurance Group
- Analyst, RMS (Risk Management Solutions)
- Reinsurance Claims Management Executive AXA Global Re, Paris
- PhD Student, NERC London Doctoral Training Centre
Masters students practice planning a humanitarian response operation following a devastating storm. The scenario exercise is run by IRDR’s NGO partner.

Types of Programme

The main differences between the programme types are the total number of credits needed, the number of taught modules taken, and whether there is an independent research project.

Masters Programmes
MSc and MRes students undertake the equivalent of a full year of study. All of our masters programmes include an independent research project.

MSc programmes are suitable for students who want to have a wide range of taught modules and do an independent research project constituting about one third of the student’s time.

MRes programmes have the dissertation as the focus of the programme, with taught modules aimed to support their learning and development; the MRes programme is ideal for students wanting to complete a considerable piece of research, possibly as training for a research career.

Post Graduate Diploma and Certificate
The PGDip and PGCert programmes comprise taught modules with no independent research project; these programmes are aimed at students who want to increase their knowledge with less of a time commitment than a masters. PGDip students take twice as many modules as PGCert students.

Learn from world-class researchers and professionals delivering the programme through a combination of lectures, class discussions, problem-solving exercises, practicals, field trips, directed reading and practitioner-led real-time disaster scenario events. There is an emphasis on hands-on learning and tutorial-style dialogue between students and lecturers. Assessment takes place through individual and group oral presentations, written examinations, coursework exercises and essays, and a research project.
The disaster risk management industry needs professionalising. Academic study can underpin this, enabling you to apply evidence and research based theory to this sector. Through a multidisciplinary approach to risk and disaster reduction, you will learn to become a future leader driving policy change and innovation in order to preserve lives and sustain economies which could otherwise be destroyed or damaged by disaster. You will gain expertise in analysing complex challenges and providing sustainable solutions.

Programme Themes

Physical and Social Science of Natural and Anthropogenic Hazards
- What is known and unknown
- Current research and uncertainties

Building Resilience
- What are the barriers to risk and disasters reduction and how do we overcome them?
- Develop a common language to communicate complex concepts in an accessible way

Understanding Vulnerability
- From fragility curves describing damage to buildings to social vulnerability of individuals and society

Quantifying Risk
- What is risk and how do we measure it?
- Components of risk: exposure, hazard, vulnerability

Multidisciplinary Holistic Approaches
- Integrating scientific knowledge into disaster risk reduction research, policy and practice
- Communicating with stakeholders

Managing Disasters
- How to apply plans to manage real emergencies
Risk, Disaster and Resilience MSc

Director: Dr Joanna Faure Walker
Availability: Full-time 1 year; Part-time 2 years; Flexible: up to 5 years.

MSc students undertake eight taught modules (15 credits each) and an independent research project (60 credits).

2 Compulsory Core Taught Modules
- Integrating Science Into Risk and Disaster Reduction
- Emergency and Crisis Management

2 Compulsory Programme Specific Taught Modules
- Natural and Anthropogenic Hazards and Vulnerability
- Emergency and Crisis Planning

2 Compulsory Taught Skills Modules
- Data Analysis and Interpretation
- Practice and Appraisal of Research

2 Optional Taught Modules
A choice of modules within the following subjects:
- Risk Analysis for Disaster Science
- Decision and Risk (Statistics)*
- Post Disaster Recovery*
- Risk, Power, and Uncertainty*
- Risk and Contingency Planning*
- Disaster Risk Reduction in Cities*
- Gender, Disaster and Conflict
- Perspectives on Terrorism*
- Adapting Cities To Climate Change in the Global South *
- Catastrophe Risk Modelling
- The Variable Sun: Space Weather and You
- Digital Public Health: Epidemics and Emergencies
- Business Continuity Management and Organisational Resilience
- Conflict, Humanitarianism, and Disaster Risk Reduction

Dissertation Project
Students undertake an independent research project.

Note: All optional modules are subject to availability and particular modules may not be possible in any given year. Non-IRDR optional modules are marked with an asterisk (*).
The global challenge of understanding risk, increasing resilience and reducing exposure to hazards has generated demand for a new type of scientist in government, business and NGOs, who can work across boundaries. In a science-led programme, you will learn how to assess and quantify risk, reduce disaster risks and manage emergencies for natural and anthropogenic hazards, humanitarian and health crises, conflict and climate change.

Programme Themes

Science of Earth and Space Hazards
Analyze different hazard risks: seismicity, space weather, epidemics, conflict and climate
Scenarios and case studies drawn globally providing breadth of experience

Statistical and Modelling Tools
Statistical treatment of risk
Bring together data and theory

Understanding Vulnerability
From fragility curves describing damage of buildings to social vulnerability of individuals and society

Quantifying Risk
What is risk and how do we measure it?
Components of risk: exposure, hazard, vulnerability

Multidisciplinary Holistic Approaches
Integrating scientific knowledge into disaster risk reduction research, policy and practice
Communicating with stakeholders

Managing Disasters
How to apply plans to manage real emergencies

Student at UCL IRDR preparing rock samples for volcanic simulation experiments

My MSc has enabled me to gain an understanding of risk, learn techniques and how to apply scientific tools in real situations. (IRDR MSc student, 2015-2016)
Risk and Disaster Science MSc

Director: Professor Peter Sammonds
Availability: Full-time 1 year; Part-time 2 years
MSc students undertake eight taught modules (15 credits each) and an independent research project (60 credits).

2 Compulsory Core Taught Modules
- Integrating Science Into Risk and Disaster Reduction
- Emergency and Crisis Management

1 Compulsory Programme Specific Core Module
- Risk Analysis for Disaster Science

2 Compulsory Taught Skills Modules
- Data Analysis and Interpretation
- Practice and Appraisal of Research

3 Optional Taught Modules
A choice of modules within the following subjects:
- Catastrophe Risk Modelling
- Digital Public Health: Epidemics and Emergencies
- Decision and Risk (Statistics)*
- Gender, Disaster and Conflict
- Conflict, Humanitarianism, and Disaster Risk Reduction
- Business Continuity Management and Organisational Resilience
- The Variable Sun: Space Weather and You
- Emergency and Crisis Planning
- Climate Risks to Hydro-Ecological Systems*
- Seismic Risk Assessment*
- Natural and Anthropogenic Hazards and Vulnerability

Dissertation Project
Students undertake an independent research project.

Note: All optional modules are subject to availability and particular modules may not be possible in any given year. Non-IRDR optional modules are marked with an asterisk (*).
Natural and anthropogenic hazards, humanitarian and health crises, conflict, and climate change create challenges for businesses and demand managerial skills to respond. This science-led programme fills a business and organizational need for graduates with management skills and innovative approaches to increase resilience. Students in the pathway are able to select up to 2 optional modules form the UCL School of Management.

Programme Themes

Disaster Management
Managerial skills to face disasters and to reduce risks
Entrepreneurial mind and innovative approaches to build resilience
Business continuity planning to manage real emergencies

Science of Earth and Space Hazards
Analyze different hazard risks: seismicity, space weather, epidemics, conflict and climate
Scenarios and case studies drawn globally to provide breadth of experience

Quantifying Risk
Components of risk: exposure, hazard, vulnerability
Understanding Vulnerability

Statistical and Modelling Tools

Multidisciplinary Holistic Approaches
Integrating scientific knowledge into disaster risk reduction research, policy and practice
Communicating with stakeholders

Managing Disasters
How to apply plans to manage real emergencies
2 Compulsory Core Taught Modules
   Integrating Science Into Risk and Disaster Reduction
   Emergency and Crisis Management
1 Compulsory Programme Specific Core Module
   Risk Analysis for Disaster Science
2 Compulsory Taught Skills Modules
   Data Analysis and Interpretation
   Practice and Appraisal of Research
3 Optional Taught Modules
A choice of modules within the following subjects including modules from UCL School of Management:
   Catastrophe Risk Modelling
   Digital Public Health: Epidemics and Emergencies
   Decision and Risk (Statistics)*
   Conflict, Humanitarianism, and Disaster Risk Reduction
   Emergency and Crisis Planning
   Gender, Disaster and Conflict
   The Variable Sun: Space Weather and You
   Natural and Anthropogenic Hazards and Vulnerability
   Business Continuity Management and Organisational Resilience
UCL School of Management optional Modules:
   Social Network Analysis*
   Influence and Negotiations*
   Decision and Risk Analysis*
   Mastering Entrepreneurship*
   Project Management*
   Entrepreneurship: Theory and Practice*

Dissertation Project
   Students undertake an independent research project.

Note: All optional modules are subject to availability and particular modules may not be possible in any given year. Non-IRDR optional modules are marked with an asterisk (*).
In an increasingly technological and globally connected world, risks to space-based communications systems and critical infrastructure are emerging threats to national security and businesses. In a programme that unites emergency response, disaster risk reduction and space technology, you will learn about satellite technology, mission design, hazards and vulnerabilities unique to outer space, disaster response, and the monitoring of hazards on Earth from outer space.

Programme Themes

Hazards of Outer Space
- Space weather, radiation, debris
- Emerging risks and the future of disaster monitoring

Satellite Design and Operations in Space
- Learn how to design and operate a satellite from the largest university space science department in the UK

Understanding Vulnerability
- From fragility curves describing damage to buildings to social vulnerability of individuals and society

Quantifying Risk
- What is risk and how to we measure it?
- Components of risk: exposure, hazard, vulnerability

Multidisciplinary Holistic Approaches
- Integrating scientific knowledge into disaster risk reduction research, policy and practice
- Communicating with stakeholders

Managing Disasters
- How to apply plans to manage real emergencies
**Space Risk and Disaster Reduction MSc**

**Director: Dr Robert Wicks**  
Availability: Full-time 1 year; Part-time 2 years  
MSc students undertake eight taught modules (15 credits each) and an independent research project (60 credits).

2 **Compulsory Core Taught Modules**
   - Integrating Science Into Risk and Disaster Reduction  
   - Emergency and Crisis Management

3 **Compulsory Programme Specific Taught Modules**
   - Space Science, Environment and Satellite Missions  
   - The Variable Sun: Space Weather and You  
   - Space Systems Engineering

1 **Compulsory Taught Skills Module**
   - Practice and Appraisal of Research

2 **Optional Taught Modules**
A choice of modules within the following subjects:
   - Data Analysis and Interpretation  
   - Emergency and Crisis Planning  
   - Catastrophe Risk Modelling  
   - Global Monitoring and Security*  
   - Decision and Risk (Statistics)*  
   - Gender, Disaster and Conflict  
   - Mechanical Design of Spacecraft  
   - Risk Analysis for Disaster Science  
   - Space-Based Communication Systems  
   - Space Instrumentation and Applications  
   - Spacecraft Design - Electronic Sub-Systems  
   - Principles and Practice of Remote Sensing*  
   - Digital Public Health: Epidemics and Emergencies  
   - Business Continuity Management and Organisational Resilience  
   - Natural and Anthropogenic Hazards and Vulnerability

**Dissertation Project**
Students undertake an independent research project.

Note: All optional modules are subject to availability and particular modules may not be possible in any given year. Non-IRDR optional modules are marked with an asterisk (*).
Evidence-based theory developed through detailed academic studies can drive effective sustainable change in practice and policy to increase resilience to disasters. In addition to the foundational principles of risk and disaster reduction, you will gain expertise in research techniques and knowledge about current practices and problems. Combining a

Director: Professor David Alexander
Availability: Full-time 1 year; Part-time 2 years
MRes students undertake five taught modules (15 credits each) and a substantial independent research project (105 credits).

2 Compulsory Core Taught Modules
- Integrating Science Into Risk and Disaster Reduction
- Emergency and Crisis Management

2 Compulsory Taught Skills Modules
- Data Analysis and Interpretation
- Practice and Appraisal of Research

1 Optional Taught Modules
A choice of the following modules:
- Natural and Anthropogenic Hazards and Vulnerability
- Emergency and Crisis Planning
- Conflict, Humanitarianism and Disaster Risk Reduction
- The Variable Sun: Space Weather and You
- Catastrophe Risk Modelling
- Risk Analysis for Disaster Science
- Gender, Disaster and Conflict
- Business Continuity Management and Organisational Resilience
- Digital Public Health: Epidemics and Emergencies

Dissertation Project
Students undertake a substantial independent research project, which culminates in an independent report and presentation.

Note: All optional modules are subject to availability and particular modules may not be possible in any given year.
Selected Independent Research Projects

The dissertation project comprises 1/3 of this course. Supervisors and resources are available for projects in a wide range of risk, disaster and resilience topics. This project culminates in a research report and poster. Here are selected few independent research project topics done by Masters graduates:

- Business Community Resilience Enablers To Inform the Development
- Silos, Strategy & Achieving Organisational Resilience
- A Case Study of Safer Schools in Sichuan, China: Perceptions and Perspectives of Students Regarding Earthquakes
- A Financial Risk Assessment of Seismic Hazard in Nepal: the Foundation of an Insurance Solution To Reduce Vulnerability
- Risks in Wartime Disasters - Can Insurance Models Keep Pace With the Changing Maritime Environment?
- Simplified Methods for Probabilistic Flood Risk Assessment in Manila, Philippines
- Comparative Study of Urban Search and Rescue National Accreditation Process in the Americas’ Region
- High Density Fine Particles (PM2.5) in South Korea : From the Perspective of a Major Human-Made Disaster
- Arctic Emergency Prevention, Preparedness & Response
- Suitability of the Early Warning Systems and Temporary Housing for the Elderly Population for the 2011 Great East Japan Earthquake and Tsunami

The totally ruined Maoba Middle school

Flood map of the City of Manila
PGDip & PGCert Programmes

**PGDip Risk, Disaster & Resilience**
Availability: Full-time 1 year; Part-time 2 years
PGDip students undertake eight taught modules (15 credits each). These modules are the same as the MSc Risk, Disaster and Resilience but without the independent project.

Temporary housing in the Philippines (left), Italy (middle) and Japan (right) following 2013 Typhoon Yolanda, 2009 L’Aquila Earthquake and the 2011 Great East Japan Earthquake and Tsunami, respectively

**PGCert Risk & Disaster Reduction**
Availability: Part-time 1 year
PGCert students undertake four taught modules (15 credits each). Students select four IRDR taught modules. The programme may be completed as a stand-alone PGCert, or it may be used as training towards subsequent completion of a PGDip or Masters.

Thames Barrier field trip - masters students learn about London flood risk
If you are interested in PhD study at UCL IRDR, we recommend that you find out more about our research, academic staff, and current PhD students from our website and our annual report, or meet us at one of our events. Applicants should identify a supervisor with suitable expertise to supervise their PhD and make contact with them before submitting a formal application to study for a PhD in UCL IRDR.

Types of Studentship

Research Council funded PhD studentships

UCL IRDR is part of two UK Research Council Doctoral Training Partnerships (DTPs). Application deadlines for September entry typically open up to a year beforehand and close in January or February of the year the PhD starts. Studentships on these DTPs provide full fees and living expenses for up to 4 years for UK and EU students.

- London NERC (Natural Environment Research Council) DTP
- UCL, Bloomsbury and East London ESRC (Economic and Social Research Council) DTP

Individually funded PhD studentships

External scholarships and self-funded PhD study

If you are interested in PhD study at UCL IRDR, we recommend that you find out more about our research, academic staff, and current PhD students from our website and our annual report, or meet us at one of our events.

Research in the IRDR aspires to be cross-disciplinary, international and have significant societal impact. Research students contribute to the intellectual life of the IRDR and actively engage with UCL as a community of scholars.
Why UCL?

At UCL we are proud of our pioneering history, our distinguished present and our exciting future. UCL is a great place to be a student.

**World-class**: UCL is one of the world’s leading universities, regularly featuring in the top 10 in global rankings.

**Cutting-edge**: Our new programmes include the latest discoveries and developments – so students would be on the cutting-edge.

**Innovation**: We are London’s Global University and London’s leading multidisciplinary university

**Diversity**: UCL has approximately 11,000 staff and 38,000 students. UCL has an international and diverse student body including 20,000 postgraduates and more than 15,000 non-UK students.

**Location**: We are based in the heart of London, one of the world's great cosmopolitan cities. It is an international hub for global finance and risk management, international NGOs, and engineering and development consultancies. The IRDR nurtures networks across London, and beyond.

**How to apply**

Please visit [https://www.ucl.ac.uk/rdr](https://www.ucl.ac.uk/rdr) to apply online.

Entry requirements: Normally a minimum of an upper second-class UK Bachelor’s degree in a relevant discipline or an overseas qualification of an equivalent standard.