

## Sample Offering for Science Study Abroad Student

With appropriate academic advice from the home institution students may select up to 2 modules per semester and up to 2 of these modules may be available from other areas within the possible appropriate modules are listed below. The full UCD Science module catalog is available at [http://www.ucd.ie/students/course\\_search.htm](http://www.ucd.ie/students/course_search.htm)

### BIOLOGY

#### Fall Semester

Course Code	Title
BIOC30090	Proteins and Enzymes
BIOL20030	Biological Systems
BIOL30010	Plant Diseases: Biology and Control
BMOL30030	Regulation of Gene Expression
BMOL30040	Receptor-mediated Cell Signalling
CELB20060	Principles of Cell & Molecular Biology
CELB30110	Plant Cell Biology
ENVB20030	Microbial Interactions
ENVB30010	Systems Ecology
GENE30010	Genetics and Recombinant DNA
MICR30040	Microbial Diversity and Growth
ZOOL20020	Animal Behaviour
ZOOL30030	Evolutionary Biology
ZOOL30050	Diversity of Invertebrates
STAT20070	Data Modelling for Science

#### Spring Semester

Course Code	Title
BIOC30030	Biochemist's Toolkit
BMOL20080	Metabolism, Immunity & Infection
BMOL30020	Molecular Basis of Disease
BMOL30050	Genomics and Proteomics
BOTN30050	Diversity of Plant Form and Function
BOTN30110	Plant Growth and Nutrient Assimilation
BOTN30130	Plant Biotechnology and Entrepreneurship
CELB30090	Advanced Cell Biology
CELB30100	Developmental Biology
ENVB30100	Ecological and Environmental Microbiology
GENE20020	Principles of Genetics
GENE30020	Genome Structure and Evolution
GENE30040	Programming for Biologists
ZOOL30010	Functional Morphology
ZOOL30020	Arthropoda
ZOOL30040	Diversity of Vertebrates
ZOOL30060	Biogeography and Field Biology

## CHEMISTRY

### Fall Semester

Course Code	Title
CHEM20040	Organic Chemistry
CHEM20080	Basis of Physical Chemistry
CHEM20090	Chemistry for Biology
CHEM20100	Basis of Inorganic Chemistry
CHEM30060	Quantum Mechanics
CHEM30090	Chemistry of Materials
CHEM30110	Instrumental Analysis
CHEM30200	Carbonyl Chemistry & Synthesis
CHEM30210	Structure Determination & Heterocyclic Chemistry
CHEM30220	Mechanism and Stereochemistry
CHEM30280	Medicinal Chemistry

### Spring Semester

Course Code	Title
CHEM20020	Inorganic Chemistry
CHEM20030	Functioning of Biomolecules
CHEM20050	Medicinal Chemistry and Chemical Biology
CHEM20110	Environmental & Sustainable Chemistry
CHEM20120	Physical Chemistry
CHEM30190	Chemistry of Biomolecules
CHEM30230	Symmetry & Computational Chemistry
CHEM30240	Main Group Chemistry & Bonding
CHEM30250	Organometal & Solid State Chemistry
CHEM30260	Chemical Biology of Natural Products
CHEM30270	Chemical Biology of Macromolecules
CHEM30310	Soft Matter & Interfacial Chemistry
CHEM30320	Chemical Thermodynamics

## COMPUTER SCIENCE

### Fall Semester

Course Code	Title
COMP20070	Databases & Information Systems I
COMP20130	Introduction to Computer Forensics
COMP30030	Introduction to AI
COMP30040	Networks & Internet Systems
COMP30070	Object-Oriented Programming
COMP30080	Computer Systems
COMP30220	Distributed Systems
COMP30260	AI for Games & Puzzles
COMP30520	Cloud Computing

### Spring Semester

Course Code	Title
COMP20030	Web Design

COMP20040	Data Structures & Algorithms II
COMP20090	Introduction to Cognitive Science
COMP20170	Introduction to Robotics
COMP30010	Foundations of Computing
COMP30020	Computer Graphics I
COMP30050	Software Engineering Project 3
COMP30110	Spatial Information Systems
COMP30540	Game Development
COMP30690	Information Theory

## GEOLOGICAL SCIENCES

### Fall Semester

Course Code	Title
GEOL20120	Investigating Minerals
GEOL20150	Earth Structure & Surface Processes
GEOL20110*	Global Environmental Change
GEOL30040	Sedimentary Environments
GEOL30240	Igneous Petrology
GEOL30250	Geological Mapping

### Spring Semester

Course Code	Title
GEOL20110*	Global Environmental Change
GEOL20140	Negotiated Field Geology
GEOL20170	Geomaterials and Geoenergy
GEOL30010	Applied Palaeontology
GEOL30070	Geology for Civil Engineers
GEOL30110	Metamorphic Petrology
GEOL30270	Geoscience Field Research 1

\*This module is carried out through blended learning, but the majority of the materi

## MATHEMATICAL SCIENCES

### Fall Semester

Course Code	Title
ACM20050	Classical Mechanics & Special Relativity
ACM20150	Vector Integral & Differential Calculus
ACM30010	Analytical Mechanics
ACM30220	Partial Differential Equations
MATH20060	Calculus of Several Variables
MATH20150	Graphs and Networks
MATH20300	Linear Algebra 2 for the Mathematical Sciences
MATH30090	Metric Spaces
MST20010	Algebraic Structures
MST30020	History of Mathematics
STAT20110	Probability Theory
STAT30010	Time Series Analysis
STAT30080	Models - Survival Models

STAT30240	Predictive Analytics I
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### Spring Semester

Course Code	Title
ACM20030	Computational Science
ACM20060	Oscillations in Mechanical Systems
ACM30020	Advanced Mathematical Methods
ACM30190	Dynamical Systems
ACM30200	Foundations of Fluid Mechanics
ACM30210	Foundations of Quantum Mechanics
MATH10320	Mathematical Analysis
MATH20260	The Mathematics of Google
MATH20270	Theory of Games
MATH20310	Group, Rings & Fields
MATH30040	Functions of one Complex Variable
MATH30180	An Introduction to Coding Theory
MST20040	Analysis
MST20050	Linear Algebra II
MST30040	Differential Equations
STAT20060	Statistics & Probability
STAT20100	Inferential Statistics
STAT30250	Advanced Predictive Analytics
STAT30270	Machine Learning (OL)

### PHYSICS

#### Fall Semester

Course Code	Title
PHYC20020	Introductory Quantum Mechanics
PHYC20080	Field, Waves and Light
PHYC30010	Thermodynamics and Statistical Physics
PHYC30020	Classical Mechanics and Relativity
PHYC30030	Quantum Mechanics
PHYC30100	Stellar Astrophysics & Astronomical Techniques

#### Spring Semester

Course Code	Title
PHYC20030	Thermal Physics & Materials
PHYC20040	Exploring the Solar System
PHYC20060	Methods for Physicists
PHYC20090	Electronics and Devices
PHYC30070	Electromagnetism
PHYC30080	Optics and Lasers
PHYC30090	Nuclear Physics

## UCD School of Medicine/Nursing & Midwifery Systems Modules

(Available to Science Study Abroad students pursuing a Pre-Medical track)

### Fall Semester

Course Code	Title
ANAT10030	Forensic Anthropology
ANAT10110	Clinical Human Anatomy I
ANAT20030	Basic Tissues and Early Development
ANAT20120	Human Form (10 credits)
CLIP30240	Stem Cells in Medicine
GPRS20010	CSI (Clinical Science & Healthcare Informatics)
MDSA20030	Endocrine biology
MEIN30240	Bioinformatics
NMHS20060	Interpersonal & Teamwork Skills
NMHS20070	Women's and Men's Health
PATH10020	Basic Principles of Cell Biology
PATH30080	Disease Mechanisms and Pharmacological Principles
PATH30210	Endocrine system in Health and Disease
PHYS20040	Cell and Tissue Physiology
PHYS20050	Cell-Cell Communication
PHYS30010	Cardiovascular Physiology
PHYS30090	Digestion and Excretion
RDGY10060	Introduction to Imaging Technology: Radiography
RDGY10090	Healthcare Imaging & Information Systems

### Spring Semester

Course Code	Title
ANAT10120	Clinical Human Anatomy II (Thorax and Abdomen)
ANAT20010	Clinical Human Anatomy III (Head, Neck and Spine)
ANAT20070	Anatomy of the Thorax
MDSA30090	Understanding Disability for Healthcare Students
MEIN10030	Multimedia Studies
MEMI30010	Medical Microbiology
NMHS30650	Cultural Competence in Clinical Practice
PATH10200	Medical Genetics
PATH30060	Genetics, perinatal & paediatric diseases
PATH30070	Mechanisms of Disease
PHYS20020	Neurophysiology
PHYS20030	Organ & Systems Physiology
PHYS30020	Respiratory Physiology
PHYS30040	Endocrine Physiology

NON-SCIENCE/ELECTIVE MODULES

### Fall Semester

Course Code	Title
FS10010	Perspectives on Media 1
GRC20010	Alexander and his Successors
HIS20780	History of Science
IR10050	Irish for Beginners
IRST10010	Introduction to Irish Studies
IRST30150	Ireland Uncovered
IRST30160	Exploring Ireland
PHIL10040	Introduction to Ethics

### Spring Semester

Course Code	Title
AH10030	Art & The Modern World
ARCH10050	Introduction to the Archaeology of Ireland
ECON10010	Principles of Microeconomics
HIS20780	History of Science
IR10050	Irish for Beginners
IRST10020	Introduction to Irish Cultural Studies
IRST30150	Ireland Uncovered
IRST30160	Exploring Ireland
POL20250	Irish Politics
SCI30030	Art Science Collaboration

The Science Programme offers a diverse range of courses across all the science disciplines: Biological/Biomedical, Chemical, Computer Sciences, Mathematical, Physical and Geographical. Students may wish to substitute other science modules as appropriate for those listed. Information can be found at: [www.ucd.ie/students/course\\_search](http://www.ucd.ie/students/course_search) and click on the

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