

Sample Offering for Science Study Abroad Students 2016/17

With appropriate academic advice from the home institution students may select up to 6 modules in a semester and up to 2 of these modules may be available from other areas within the University. Some of the possible appropriate modules are listed below. The full UCD Science module catalogue is available online via http://www.ucd.ie/students/course_search.htm

BIOLOGY

Fall Semester

Course Code	Title	Academic Level
BIOC30090	Proteins and Enzymes	Advanced
BIOL20030	Biological Systems	Higher
BIOL30010	Plant Diseases: Biology and Control	Advanced
BMOL30030	Regulation of Gene Expression	Advanced
BMOL30040	Receptor-mediated Cell Signalling	Advanced
CELB20060	Principles of Cell & Molecular Biology	Higher
CELB30100	Developmental Biology	Advanced
CELB30060	Plant Cell Growth and Cell Signalling	Advanced
ENVB20030	Microbial Interactions	Higher
ENVB30010	Systems Ecology	Advanced
GENE30010	Genetics and Recombinant DNA	Advanced
MICR30040	Microbial Diversity and Growth	Advanced
ZOOL20020	Animal Behaviour	Higher
ZOOL30050	Diversity of Invertebrates	Advanced

Spring Semester

Course Code	Title	Academic Level
BIOC30030	Biochemist's Toolkit	Advanced
BMOL20080	Metabolism, Immunity & Infection	Higher
BMOL30020	Molecular Basis of Disease	Advanced
BMOL30050	Genomics and Proteomics	Advanced
BOTN30050	Diversity of Plant Form and Function	Advanced
BOTN30110	Plant Growth and Nutrient Assimilation	Advanced
BOTN30130	Plant Biotechnology and Entrepreneurship	Advanced
CELB30080	Research Methods in Cell Biology	Advanced
CELB30090	Advanced Cell Biology	Advanced
ENVB30100	Ecological and Environmental Microbiology	Advanced
GENE20020	Principles of Genetics	Higher
GENE30020	Genome Structure and Evolution	Advanced

ZOOL30010	Functional Morphology	Advanced
ZOOL30020	Arthropoda	Advanced
ZOOL30030	Evolutionary Biology	Advanced
ZOOL30040	Diversity of Vertebrates	Advanced
ZOOL30060	Biogeography and Field Biology	Advanced

CHEMISTRY

Fall Semester

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

Spring Semester

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

COMPUTER SCIENCE

Fall Semester

Course Code	Title	Academic Level
COMP20070	Databases & Information Systems	Higher
COMP20130	Introduction to Computer Forensics	Higher
COMP30010	Foundations of Computing	Advanced
COMP30030	Introduction to AI	Advanced
COMP30040	Networks & Internet Systems	Advanced
COMP30070	Object-Oriented Programming	Advanced
COMP30110	Spatial Information Systems	Advanced
COMP30120	Machine Learning	Advanced
COMP30220	Distributed Systems	Advanced
COMP30260	AI for Games & Puzzles	Advanced
COMP30690	Information Theory	Advanced

Spring Semester

Course Code	Title	Academic Level
COMP20030	Web Design	Higher
COMP20040	Data Structures & Algorithms II	Higher
COMP20090	Introduction to Cognitive Science	Higher
COMP20170	Introduction to Robotics	Higher
COMP30020	Computer Graphics	Advanced
COMP30050	Software Engineering Project 3	Advanced
COMP30080	Processor Design	Advanced
COMP30160	Object-Oriented Design	Advanced

GEOLOGICAL SCIENCES

Fall Semester

Course Code	Title	Academic Level
GEOL20150	Earth Structure & Surface Processes	Higher
GEOL20160	Quantitative Geosciences	Higher
GEOL20110	Global Environmental Change	Higher
GEOL30040	Sedimentary Environments	Advanced
GEOL30090	Earth Resources & Applied Geology	Advanced
GEOL30240	Igneous Petrology	Advanced
GEOL30250	Geological Mapping	Advanced

Spring Semester

Course Code	Title	Academic Level
GEOL20110	Global Environmental Change	Higher
GEOL20120	Investigating Minerals	Higher
GEOL30070	Geology for Civil Engineers	Advanced
GEOL30100	Structural & Petroleum Geology	Advanced
GEOL30110	Metamorphic Petrology	Advanced
GEOL30270	Geoscience Field Research 1	Advanced

MATHEMATICAL SCIENCES

Fall Semester

Course Code	Title	Academic Level
ACM20050	Classical Mechanics & Special Relativity	Higher
ACM20150	Vector Integral & Differential Calculus	Higher
ACM30010	Analytic Mechanics	Advanced
ACM30220	Partial Differential Equations	Advanced
ACM30020	Advanced Mathematical Methods	Advanced
MATH20060	Calculus of Several Variables	Higher
MATH20150	Graphs and Networks	Higher
MATH20300	Linear Algebra 2 for the Mathematical Sciences	Higher
MATH30040	Functions of one Complex Variable	Advanced
MATH30090	Metric Spaces	Advanced
MATH30130	Number Theory	Advanced
MST20010	Algebraic Structures	Higher
MST30020	History of Mathematics	Advanced
STAT20110	Probability Theory	Higher
STAT30010	Time Series Analysis`	Advanced
STAT30080	Models - Survival Models	Advanced
STAT30240	Linear Models I	Advanced

Spring Semester

Course Code	Title	Academic Level
ACM20030	Computational Science	Higher
ACM20060	Oscillations in Mechanical Systems	Higher
ACM30190	Dynamical Systems	Advanced
ACM30200	Foundations of Fluid Mechanics	Advanced
ACM30210	Foundations of Quantum Mechanics	Advanced
MATH10320	Mathematical Analysis	Entry
MATH20140	Multivariable Calculus for the Sciences	Higher
MATH20260	The Mathematics of Google	Higher

MATH20270	Theory of Games	Higher
MATH20310	Group, Rings & Field	Higher
MATH30250	Cryptography : Theory & Practice	Advanced
MST20040	Analysis	Higher
MST20050	Linear Algebra II	Higher
MST30040	Differential Equations via Computer Algebra	Advanced
STAT20060	Statistics & Probability	Higher
STAT20100	Inferential Statistics	Higher
STAT30250	Linear Models II	Advanced
STAT30270	Statistical Data Mining	Advanced

PHYSICS

Fall Semester

Course Code	Title	Academic Level
PHYC20020	Introductory Quantum Mechanics	Higher
PHYC20080	Field, Waves and Light	Higher
PHYC30010	Thermodynamics and Statistical Physics	Advanced
PHYC30020	Classical Mechanics and Relativity	Advanced
PHYC30030	Quantum Mechanics	Advanced
PHYC30100	Stellar Astrophysics	Advanced

Spring Semester

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

NON-SCIENCE MODULES

Fall Semester

Course Code	Title	Academic Level
ECON10010	Principles of Microeconomics	Entry
FS10010	Perspectives on Film 1	Entry
IR10050	Irish Language	Entry
IRST30150	Ireland Uncovered	Advanced
IRST10010	Introduction to Irish Studies	Entry
IRST20020	Gender, Culture & Society in Ireland	Higher
PHIL10040	Introduction to Moral Philosophy	Entry
POL10010	Introduction to Irish Politics	Entry

Spring Semester

Course Code	Title	Academic Level
AH10030	Art & The Modern World	Entry
ARCH10060	Introduction to the Recent Past	Entry
ECON10010	Principles of Microeconomics	Entry
GRC20010	Alexander and his Successors	Higher
IRST10020	Introduction to Irish Cultural Studies	Entry
IRST30150	Ireland Uncovered	Advanced
SOC10030	Irish Culture & Society	Entry

The Science Programme offers a diverse range of courses across all the science disciplines, including Biological/Biomedical, Chemical, Computer Sciences, Mathematical, Physical and Geological Sciences. Students may wish to substitute other science modules as appropriate for those listed above. Module information can be found at: www.ucd.ie/students/course_search and click on the link to Science.