



UCD SCIENCE

Stage 2 Summary
Core Module Tables
2024/25

STAGE
2

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Students in Science are required to select a minimum of two degree subjects in Stage 2. If your chosen subjects are Pharmacology, Physiology or Neuroscience you must select an additional subject to keep your options open.

Students choose their degree major for Stages 3 and 4 in the summer term prior to commencing Stage 3.

The purpose of this document is to guide you on module selection for degree subjects in Stage 2.

The following tables are a summary of the modules you will need to take to fulfil the requirements for different degree subjects. They show that a number of subjects are compatible and have some of the same core requirements. If you select carefully, you can fulfil the degree requirements for a number of subjects. For each subject there are modules that you may have to do depending on what you have studied already (Conditional Core), modules that you must do in a particular stage (Core) and modules that you must do either in Stage 1 or Stage 2 or in Stage 2 or Stage 3 (Programme Core).

Choosing your Stage 2 Degree Subjects

In Stage 2, students must cover the requirements for a minimum of 2 or 3 subjects. Due to timetable and workload constraints not all combinations of subjects are possible in Stage 2. The choice of Stage 2 subjects that can be combined depends on the number of core modules shared between those subjects and the extent to which other requirements have been met in Stage 1.

Remember:

- **Core modules:** A module that students must do as part of their programme.
- **Conditional Core modules:** Students may need to take these modules in Stage 2, if not already taken in Stage 1 of the Science programme. This depends if they have not achieved a grade or completed the subject at Leaving Certificate standard, or equivalent.
- **Programme Core modules:** Are also compulsory, but students can choose to take these modules in Stage 1 or Stage 2; or in Stage 2 or Stage 3.



Core modules required for Stage 2 | Biological, Biomedical and Biomolecular Sciences; and Earth & Environmental Sciences Degrees

● Conditional Core (may need to be taken in Stage 2, if not already taken in Stage 1 - depending on LC results)
● Programme Core (taken in Stage 1 or 2)
● Core (taken in Stage 2)
● Programme Core (taken in Stage 2 or 3)

Module Code	Title	Trimester	Biochem. & Molecular Biology	Microbiology	Pharmacology	Neuroscience	Genetics	Cell & Molecular Biology	Environmental Biology	Plant Biology	Zoology	Physiology	Geology
Any 2 of BIOL10130, BIOL10140 and BMOL10030			●	●	●	●	●	●	●	●	●	●	
MATH10310	Calculus for Science	Aut	●	●	●	●	●	●	●	●	●	●	●
PHYC10070	Foundations of Physics	Aut				●						●	
BMOL20060	Biomolecular Lab Skills 1	Aut	●	●	●	●	●	●	●	●	●	●	
BMOL20070	Biomolecular Lab Skills 2	Spr	●	●	●	●	A						
BMOL20090	Molecular Genetics and Biotech	Aut	●	●	●	●	A					●	
BMOL20110	Biomolecular Sciences	Aut	●	●	●	●	●					●	
BIOC20060	Biochemistry in Action	Spr	●										
CHEM20090	Chemistry for Biology	Aut	B	B	B	B	B	B	B	B	B	B	
MICR20050	Microbio in Med, Biotech & Env	Spr		●									
PHAR20040	Pharmacology: Biomedical Science	Spr			●								
NEUR20050	Principles of Neuroscience	Spr				●							
GENE20020	Principles of Genetics	Spr					●						
CELB20060	Principles of Cell & Mol Biology	Aut						●					
BIOL20060	Scientific Communication	Spr					A	●	●	●	●		
ENVB20050	Principles of Env Biol & Ecology	Spr							●		●		
BOTN20050	Principles of Plant Biology	Spr								●			
ZOOL20030	Principles of Zoology	Spr									●		
PHYS20040	Cell and Tissue Physiology	Aut										●	
PHYS20030	Organ and Systems Physiology	Spr										●	
GEOL20250	Crystals to Sedimentary Rocks	Aut											●
GEOL20210	Field Geology and Mapwork	Spr											●
GEOL20200	Dynamic Earth	Aut											●

NOTES:

A Students who wish to pursue genetics in stage 3 must take BMOL20110 and either BMOL20070 or BIOL20060 in Stage 2

B Students who have taken, both CHEM20080 and CHEM20100, are not required to take CHEM20090.

C Students who have passed MATH10350 Calculus (MPS) are not required to take MATH10310 Calculus for Science.



Core modules required for Stage 2 | Chemistry and Chemical Science Degrees

● Core (taken in Stage 2) ● Programme Core (taken in Stage 1 or 2)

Module Code	Title	Trimester	Chemistry	Environ. Chemistry	Medicinal Chemistry
CHEM20100	Basis of Inorganic Chemistry	Aut	● B	● B	● B
CHEM20140	Introductory Transition Metal	Spr	●	●	●
MATH10310	Calculus for Science	Aut	● A	● A	● A
CHEM20040	Organic Chemistry (Level 2)	Aut	●	●	●
CHEM20080	Basis of Physical Chemistry	Aut	● B	● B	● B
CHEM20120	Physical Chemistry (level 2)	Spr	●	●	●
CHEM20110	Env & Sustainable Chem.	Spr		●	
BMOL20090	Molecular Genetics and Biotech	Aut			●
BMOL20110	Biomolecular Sciences	Aut			●
BMOL20070	Biomolecular Lab Skills 2	Spr			●
CHEM20050	Med Chem and Chem Bio (level 2)	Spr			●
PHAR20040	Pharmacology: Biomedical Science	Spr			●

NOTES:

A Students who have already taken and passed MATH10350 Calculus (MPS) do not need to take MATH10310 Calculus for Science.

B Students who wish to combine Biological, Biomolecular, and Biomedical subjects with Chemistry subjects in Stage 2 should take CHEM20080 and CHEM20100 instead of CHEM20090 to satisfy the core requirements of both of their subjects.

Core modules required for Stage 2 | Mathematics & Physics Degrees

● Core (taken in Stage 2) ● Programme Core (taken in Stage 1 or 2) ● Programme Core (taken in Stage 2 or 3)
 ● Programme Core for all Stage 2 Physics if PHYC10250 completed in Stage 1

Module Code	Title	Trimester	Maths	ACM	Fin. Maths	Stats	Physics	Theoretical Physics	Astron. & Space Sci
ACM20030	Computational Science	Aut	●	●	●	●	●	●	●
MATH20060	Calculus of Several Variables	Aut	●	●	●	●	●	●	●
MATH20300	Linear Algebra 2	Aut	●	●	●	●			
STAT20110	Introduction to Probability	Aut	●	●	●	●			
ACM20150	Vector Calculus	Spr	●	●	●		●	●	●
MATH20310	Groups, Rings and Fields	Spr	●						
STAT20100	Inferential Statistics	Spr	●	●	●	●			
MATH10040	Numbers & Functions	Aut	●		●				
MATH10320	Mathematical Analysis	Spr	●	●	●	●			
ACM20050	Classical Mechanics	Aut		●				●	
ACM20060	Oscillations and Waves	Spr		●				●	
FIN20040	Foundations of Finance	Aut			●				
ECON10720	Microeconomics for Business	Spr			●				
STAT20230	Modern Regression Analysis	Aut			●	●			
STAT20180	Intro to Bayesian Analysis	Spr				●			
PHYC20020	Introductory Quantum Mechanics	Aut					●	●	●
PHYC20060	Methods for Physicists	Spr					●	●	●
PHYC20090	Electronics and Devices	Spr					●	●	●
PHYC20080	Fields, Waves and Light	Spr					●	●	●
ACM10060	Appl of Differential Equations	Spr					●		●
PHYC20100	Thermo & Stat Physics	Aut					●	●	●
PHYC10250	Thermal Physics and Materials	Aut					●	●	●
PHYC20040	Exploring the Solar System	Spr							●
PHYC10050	Astronomy & Space Science	Aut							●



Core modules required for Stage 2 | Science, Mathematics & Education Degrees

● Core (taken in Stage 2) ● Programme Core (taken in Stage 1 or 2) ● Programme Core (taken in Stage 2 or 3)

● Programme Core for all Stage 2 Physics if PHYC10250 completed in Stage 1

Module Code	Title	Trimester	Maths, Appl Maths & Ed.	Maths, CompSci & Ed.	Maths, Physics & Ed.	Maths, Biol. & Ed. (A)	Maths, Biol. & Ed (B)	Maths, Chem. & Ed
Choose 1 of GENE20020, MICR20050 or PHAR20040							B	
Any 2 of BIOL10130, BIOL10140 or BMOL10030						●	●	
ACM20030	Computational Science	Aut	●	●	●			
ACM20050	Classical Mech. & Special Rel.	Aut	●					
EDUC20030	Key Ideas in Education	Aut	●	●	●	●	●	●
MATH20060	Calculus of Several Variables	Aut	●	●	●			
MATH20300	Linear Algebra 2 (Math Sci)	Aut	●	●				
STAT20110	Introduction to Probability	Aut	●	●	●			●
ACM20060	Oscillations and Waves	Spr	●					
ACM20150	Vector Calculus	Spr	●	●	●			
MATH20310	Groups, Rings and Fields	Spr	●	●				
MATH10040	Numbers & Functions	Aut	●	●				
MATH10320	Mathematical Analysis	Spr	●	●	●			
BMOL20060	Biomolecular Lab Skills 1	Aut				●	●	
CELB20060	Principles of Cell & Mol Biology	Aut				●		
MST20070	Multivariable Calculus	Aut				●	●	●
BIOL20060	Scientific Communication	Spr				●		
BOTN20050	Principles of Plant Biology	Spr				●		
EDUC20020	Science and Maths Pedagogy	Spr			●	●	●	●
ENVB20050	Principles of Env Biol & Ecology	Spr				●		
CHEM20090	Chemistry for Biology	Aut				●	●	
ACM10100	Differential & Diff Equations	Spr				●	●	●
MST20040	Analysis	Spr				●	●	●
BMOL20090	Molecular Genetics and Biotech	Aut					●	
BMOL20110	Biomolecular Sciences	Aut					●	
BMOL20070	Biomolecular Lab Skills 2	Spr					●	
CHEM20040	Organic Chemistry (Level 2)	Aut						●
CHEM20080	Basis of Physical Chemistry	Aut						●
CHEM20100	Basis of Inorganic Chemistry	Aut						●
MST20010	Algebraic Structures	Aut						●
CHEM20120	Physical Chemistry (Level 2)	Spr						●
CHEM20140	Introductory Transition Metal	Spr						●
COMP20350	Object-Oriented Programming	Aut		●				
COMP10050	Software Engineering Project 1	Spr		●				
COMP20280	Data Structures	Spr		●				
PHYC20020	Introductory Quantum Mechanics	Aut			●			
PHYC20060	Methods for Physicists	Spr			●			
PHYC20090	Electronics and Devices	Spr			●			
PHYC20080	Fields, Waves and Light	Spr			●			
PHYC10250	Thermal Physics and Materials	Aut			●			
PHYC20100	Thermo & Stat Physics	Aut			●			

NOTES:

A If ACM10060 was not taken in Stage 1, then ACM10100 must be taken in Stage 2. **B** Students who intend to progress to stage 3 Maths, Biol and Education (B) must take at least one of the following in stage 2: GENE20020, MICR20050 or PHAR20040.



What's next?

In Stage 3 and Stage 4, students study one of their Stage 2 subjects to degree level and this subject is their degree major. The selection of degree major may be competitive.

In the past few years, for example, Pharmacology, Physiology and Neuroscience, were competitive.

Stage 2 students will be invited to an Academic Advisory session in the Spring Trimester for further information on Stage 3 of the degree programme.



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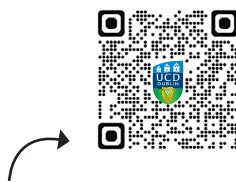
UCD College of Science
Room E1.09, UCD O'Brien Centre for Science
University College Dublin, Belfield, Dublin 4, Ireland D04 V1W8

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