# UCD SCIENCE
# Stage 2 Core Module Tables

# 2025/26

Students in Science are required to select a minimum of two degree subjects in Stage 2. Some degree choices can be competitive. If your chosen subjects are any combination of Pharmacology, Physiology and Neuroscience you must select an additional subject to keep your options open.

After meeting the requirements of at least two subjects in Stage 2, students select their degree subject in the summer trimester 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 two or three 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 & Biomolecular Sciences; and Earth & Environmental Sciences Degrees in DN200

- 🔴 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 | Earth Sciences |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Any 2 of BIOL10130, BIOL10140 and BMOL10030 | | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | |
| MATH10310 | Calculus for Science | Aut | B | B | B | B | B | B | B | B | B | B | B |
| PHYC10070 | Foundations of Physics | Aut | | | | 🔴 | | | | | | 🔴 | |
| BMOL20060 | Biomolecular Lab Skills 1 | Aut | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | |
| BMOL20070 | Biomolecular Lab Skills 2 | Spr | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | | | | | | |
| BMOL20090 | Molecular Genetics and Biotech | Aut | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | | | | | 🟢 | |
| BMOL20110 | Biomolecular Sciences | Aut | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | | | | | 🟢 | |
| BIOC20060 | Biochemistry in Action | Spr | 🟢 | | | | | | | | | | |
| CHEM20090 | Chemistry for Biology | Aut | A | A | A | A | A | A | A | A | A | A | |
| 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 | | | | | | | 🟢 | 🟢 | 🟢 | | |
| 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 | Earth Materials and Processes | Aut | | | | | | | | | | | 🟢 |
| GEOL20210 | Field Geology and Mapwork | Spr | | | | | | | | | | | 🟢 |
| GEOL20200 | Dynamic Earth | Aut | | | | | | | | | | | 🟣 |
| ZOOL20020 | Animal Behaviour | Aut | | | | | | | C | | | | |
| GEOL10070 | Understanding Earth Systems | Spr | | | | | | | | | | | 🟡 |

**NOTES:**
A Students who combine Chemistry and BBB degree subjects in Stage 2 must take CHEM20080 and CHEM20100 instead of CHEM20090.
B Students who have already taken and passed MATH10350 Calculus (MPS) do not need to take MATH10310 Calculus for Science.
C Students who wish to take Environmental Biology in Stage 3 are recommended to take ZOOL20020 Animal Behaviour in Stage 2.

## Core modules required for Stage 2 | Chemistry Degree in DN200

● 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 | Environmental and 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 combine Chemistry and Biological, Biomolecular & Biomedical Sciences degree subjects in Stage 2 must take CHEM20080 and CHEM20100 instead of CHEM20090.

# Core modules required for Stage 2 | Mathematics & Physics Degrees in DN200

🟢 **Core** (taken in Stage 2)   🟡 **Programme Core** (taken in Stage 1 or 2)   🟣 **Programme Core** (taken in Stage 2 or 3)

| Module Code | Title | Trimester | Maths | Applied & Comp. Maths | Financial Maths | Statistics | Physics | Theoretical Physics | Physics w/ Astronomy & Space Science |
|---|---|---|---|---|---|---|---|---|---|
| ACM20030 | Computational Science | Aut | 🟢 | 🟢 | 🟢 | 🟢 | 🟣 | 🟢 | 🟣 |
| MATH20060 | Calculus of Several Variables | Aut | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 | 🟢 |
| MATH20300 | Linear Algebra 2 (MathSci) | 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 | Spr | | 🟢 | | | | 🟢 | |
| ACM20060 | Oscillations and Waves | Spr | | 🟢 | | | | 🟢 | |
| FIN20040 | Foundations of Finance | Aut | | | 🟢 | | | | |
| ECON10720 | Microeconomics for Business | Spr | | | 🟡 | | | | |
| STAT20230 | Modern Regression Analysis | Aut | | | 🟣 | 🟢 | | | |
| STAT20250 | Data Programming with R | 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 in DN200

- 🟢 **Core** (taken in Stage 2)
- 🟡 **Programme Core** (taken in Stage 1 or 2)
- 🟣 **Programme Core** (taken in Stage 2 or 3)

| 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 Mechanics | Spr | 🟢 | | | | | |
| 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 | | | | 🟢 | | |
| EDUC10300 | Public Engagement with Science | Spr | | | 🟢 | 🟢 | 🟢 | 🟢 |
| ENVB20050 | Principles of Env Biol & Ecology | Spr | | | | 🟢 | | |
| CHEM20090 | Chemistry for Biology | Aut | | | | 🟢 | 🟢 | |
| ACM10100 | Differential & Diff Equations | Spr | | | | A | A | A |
| 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 | | 🟢 | | | | |
| 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** ACM10060 should be taken in Stage 1. If not taken in Stage 1, ACM10100 must be taken in its place 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.
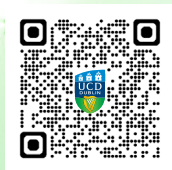
**College of Science Office**

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

**More information/ Queries/ Contact  Us**
www.ucd.ie/askscience

**w:** www.ucd.ie/science/

**t:** 01 716 2120



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