

# Chemistry, Mathematics & Education

CAO code: DN200 Option: Chemistry & Chemical Sciences (CCS)



Group work in an active learning environment classroom.

“ Science and Mathematics were always my favourite subjects in school and I knew I would study something Science related at third level. Having always wanted to be a teacher, I realised that the Science, Maths and Education pathway was for me as I get to study my two favourite subjects, Chemistry and Mathematics, in depth. I am currently undertaking a placement in Third Year. It is an eight-week observation/teaching placement that runs alongside my lectures and labs. It is extremely beneficial as I can see the theories and educational practices I have been learning over the last two years put into practice and it is an opportunity to prepare myself for the year-long placement in my final year.

**Conor Eivers, Student** ”

## Sample pathway to become a Chemistry and Mathematics teacher \*

### YEAR 1 ENGAGE WITH THE PRINCIPLES

<b>EDUCATION</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Mathematics &amp; Science Education &amp; Communication</li> </ul>	<b>CHEMISTRY</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Introductory Chemistry</li> <li>▶ Organic Chemistry and Chemical Biology</li> </ul>	<b>MATHEMATICS</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Linear Algebra</li> <li>▶ Calculus</li> <li>▶ Statistical Modelling</li> </ul>	<b>SCIENCE</b> <ul style="list-style-type: none"> <li>▶ Biology</li> <li>▶ Physics</li> </ul> <hr/> <ul style="list-style-type: none"> <li>▶ One Small-Group Project</li> <li>▶ Elective Module</li> </ul>
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### YEAR 2 CHOOSE YOUR SUBJECTS

The subject combinations listed below are illustrative of what a student who graduates in Chemistry, Mathematics & Education could choose in Year 2. Further subject combinations are possible depending on the choices in Year 1. Further information is available on page 19.

<b>EDUCATION</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Education for Democracy</li> <li>▶ Science and Mathematics Pedagogy</li> </ul>	<b>CHEMISTRY</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Physical Chemistry</li> <li>▶ Organic Chemistry</li> <li>▶ Inorganic Chemistry</li> </ul>	<b>MATHEMATICS</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Calculus of Several Variables</li> <li>▶ Differential &amp; Difference Equations</li> <li>▶ Analysis</li> </ul>	<ul style="list-style-type: none"> <li>▶ Two Elective Modules</li> </ul>
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### YEAR 3 REFINE YOUR KNOWLEDGE

<b>EDUCATION</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Teaching Second-Level Science</li> <li>▶ Schools and Society</li> </ul>	<b>SCHOOL PLACEMENT</b> <ul style="list-style-type: none"> <li>▶ Post-Primary Placement</li> <li>▶ Peer-Assisted Tutoring</li> </ul>	<b>CHEMISTRY</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Instrumental Analysis</li> <li>▶ Mechanism and Stereochemistry</li> <li>▶ Main Group Chemistry and Bonding</li> <li>▶ Chemical Thermodynamics</li> <li>▶ Carbonyl Chemistry and Synthesis</li> <li>▶ Organometallic and Solid State Chemistry</li> </ul>	<b>MATHEMATICS</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Algebraic Structures</li> <li>▶ Probability Theory</li> <li>▶ Geometry</li> </ul>
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### YEAR 4 PREPARE FOR PROFESSIONAL PRACTICE

<b>EDUCATION</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Pedagogical Approaches to Mathematics and Science</li> <li>▶ Psychology for Teaching and Learning</li> </ul>	<b>SCHOOL PLACEMENT</b> <ul style="list-style-type: none"> <li>▶ Year-Long Placement in Post-Primary School</li> <li>▶ Classroom Teaching</li> <li>▶ Broad Experience of Wider School Context</li> </ul>	<b>MATHEMATICS</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Group Theory</li> <li>▶ Geometry</li> <li>▶ Complex Analysis</li> <li>▶ History of Mathematics</li> </ul>
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## BSc Chemistry, Mathematics & Education

### YEAR 5 PREPARE FOR PROFESSIONAL PRACTICE

<b>EDUCATION</b> <i>Modules include:</i> <ul style="list-style-type: none"> <li>▶ Research Methods</li> <li>▶ Professional Dissertation</li> </ul>	<b>SCHOOL PLACEMENT</b> <ul style="list-style-type: none"> <li>▶ Year-Long Placement in Post-Primary School</li> <li>▶ Continuous Professional Development Activities</li> <li>▶ Further Development of Professional Practice Portfolio</li> </ul>
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## MSc Mathematics and Science Education

<b>QUALIFIED TO TEACH</b>			
<b>Post-Primary School Teacher</b>	<b>Chemistry</b> <i>Leaving Certificate</i>	<b>Mathematics</b> <i>Leaving Certificate</i>	<b>Science</b> <i>Junior Certificate</i>

\*See pages 4 and 5 for information on the terminology used above. Potential combinations shown here are examples only and are not guaranteed by UCD. Modules are subject to change each year.