

Physics, Mathematics & Education

CAO code: DN200 Option: Mathematical, Physical & Geological Sciences (MPG)



Students discussing how to prepare a Physics class.

Sample pathway to become a Physics and Mathematics teacher *

YEAR 1 ENGAGE WITH THE PRINCIPLES

EDUCATION <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Introduction to Mathematics Pedagogy 	PHYSICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Foundations of Physics ▶ Frontiers of Physics 	MATHEMATICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Linear Algebra ▶ Calculus ▶ Applications of Differential Equations ▶ Statistical Modelling 	* SCIENCE <ul style="list-style-type: none"> ▶ Biology ▶ Chemistry
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YEAR 2 CHOOSE YOUR SUBJECTS

EDUCATION <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Education Issues and Ideas ▶ Science and Mathematics Pedagogy 	PHYSICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Quantum Mechanics ▶ Electromagnetism and Optics ▶ Fields, Waves and Light ▶ Methods for Physicists ▶ Thermal Physics 	MATHEMATICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Vector Integral and Differential Calculus ▶ Calculus of Several Variables ▶ Analysis 	<ul style="list-style-type: none"> ▶ Elective Modules
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YEAR 3 REFINE YOUR KNOWLEDGE

EDUCATION <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Collaborative Pedagogy in Mathematics Education ▶ Schools and Society 	SCHOOL PLACEMENT <ul style="list-style-type: none"> ▶ Post-Primary Placement ▶ Peer-Assisted Tutoring ▶ Small Group Tutoring 	PHYSICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Classical Mechanics and Relativity ▶ Quantum Mechanics ▶ Electromagnetism ▶ Nuclear Physics ▶ Laboratory Skills 	MATHEMATICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Algebraic Structures ▶ Probability Theory
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YEAR 4 PREPARE FOR PROFESSIONAL PRACTICE

EDUCATION <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Pedagogical Approaches to Mathematics and Science ▶ Psychology for Teaching and Learning 	SCHOOL PLACEMENT <ul style="list-style-type: none"> ▶ Year-Long Placement in Post-Primary School ▶ Classroom Teaching ▶ Broad Experience of Wider School Context 	PHYSICS AND MATHEMATICS <i>Topics include:</i> <ul style="list-style-type: none"> ▶ Particle Physics ▶ Differential Equations with Computer Algebra ▶ Geometry ▶ Complex Analysis ▶ History of Mathematics
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BSc Physics, Mathematics & Education

YEAR 5 PREPARE FOR PROFESSIONAL PRACTICE

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

Post-Primary School Teacher QUALIFIED TO TEACH

Physics <i>Leaving Certificate</i>	Mathematics <i>Leaving Certificate</i>	Science <i>Junior Certificate</i>
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“ The Science DN200 course was a perfect option for me as it allowed me to study all the sciences in first year before concentrating on my chosen pathway of Physics, Maths & Education. I plan to further my studies to MSc level where I hope to qualify as a post-primary education teacher. Such is the flexibility of this course, however, that many other options are still available to me in both Maths and Physics. UCD offers many opportunities for students to get involved. I have been a member of UCD GAA club since first year and play with the Men’s Gaelic Football Team. It is a good way of getting a break from time spent studying.”

Jim Rossiter, Student

*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. Topics are subject to change each year.