

Physics and 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"> Teaching and Learning Mathematics 	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 University – Peer-Assisted Tutoring 	PHYSICS <i>Topics include:</i> <ul style="list-style-type: none"> Classical Mechanics and Relativity Quantum Mechanics Electromagnetism 	MATHEMATICS <i>Topics include:</i> <ul style="list-style-type: none"> Algebraic Structures Geometry Probability Theory History of Mathematics
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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 Curriculum and Assessment 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
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BSc Mathematics, Physics and 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

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

*See page 42 for more information on subject choices. Potential combinations shown here are examples only and are not guaranteed by UCD. Topics are subject to change each year.

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It is essential that there are more teachers of Mathematics and Science who are knowledgeable and passionate about their subjects. The Science and Mathematics Education pathways in DN200 will contribute to the next generation of well-qualified and innovative teachers.

Dr Aoibhinn Ní Shúilleabháin, Staff

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