

# MASTER CURRICULUM – SCIENCE AND TECHNOLOGY OF NUCLEAR FUSION – 2024/2025

Compulsory courses NF				
Code	Course	EC	Q	Timeslot
<a href="#">3MF513</a>	Fusion basics: Physics for Engineers, Engineering for physicists	5	GS1	D
<a href="#">3MF100</a>	Fusion on the back of an envelope	5	GS1	E
<a href="#">3MF110</a>	Magnetic confinement and MHD of fusion plasmas	5	GS2	C
<a href="#">3MF120</a>	Fusion reactor materials and plasma-wall interaction	5	GS4	E

Free elective				
Code	Course	EC	Q	Timeslot
<a href="#">3MC010</a>	Career development	2,5	GS2or GS4	D1,C2

Internship & Graduation			
Code	Course	EC	Timeslot
<a href="#">3NFA45</a>	Graduation project Science and Technology of Nuclear Fusion	45	X
<a href="#">3NFA60</a>	Graduation project Science and Technology of Nuclear Fusion	60	X
<a href="#">3NFS15</a>	Internship Science and Technology of Nuclear Fusion	15	X
<a href="#">3NFIDD225</a>	Combined graduation project - Science and Technology of Nuclear Fusion part	22,5	X
<a href="#">3NFIDD30</a>	Combined graduation project - Science and Technology of Nuclear Fusion part	30	X

NF Track Electives - Fusion Physics (Experimental)				
Code	Course	EC	Q	Timeslot
<a href="#">3MB010</a>	Physics of plasma and radiation	5	GS1	A
<a href="#">3MA020</a>	Advanced electrodynamics	5	GS2	B
<a href="#">3MF130</a>	Heating and diagnosing fusion plasmas	5	GS3	B
<a href="#">5SPB0</a>	Microwave engineering and antennas	5	GS2	E2
<a href="#">5CTA0</a>	Statistical signal processing	5	GS1+GS3	A,B

NF Track Electives – Computational Fusion & Theory				
Code	Course	EC	Q	Timeslot
<a href="#">3MA010</a>	Computational and mathematical physics	5	GS1	B
<a href="#">3MT120</a>	Advanced computational fluid and plasma dynamics	5	GS3	E
<a href="#">2MMN10</a>	Scientific Computing	5	GS1	E
<a href="#">2MMN20</a>	Scientific Programming	5	GS2	B
<a href="#">2MMN30</a>	Scientific Computing in partial differential equations	5	GS4	C
<a href="#">4AI000</a>	Machine learning for multi-physics modelling and design	5	GS4	E
<a href="#">5SC28</a>	Machine learning for Systems and Control	5	GS4	B

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NF Track Electives – Fusion Control				
Code	Course name	EC	Q	Timeslot
<a href="#">3MF130</a>	Heating and diagnosing fusion plasmas	5	GS3	B
<a href="#">4CM00</a>	Control engineering	5	GS1+GS3	C,E
<a href="#">4SC090</a>	Control and Operation of Future Energy Systems	5	GS3	D
<a href="#">4CM10</a>	System theory for control	5	GS1	B

NF Masterclasses (first week of the quarter)				
Code	Course name	EC	Q	Timeslot
<a href="#">3MF501</a>	Fusion Masterclass: Smarter than ITER	2,5	GS2	X
<a href="#">3MF507</a>	Fusion Masterclass: Turbulence and transport in fusion plasmas	2,5	GS3	X
<a href="#">3MF504</a>	Fusion Masterclass: Deployment of fusion power	2,5	GS4	X

NF Track Electives – Fusion Materials				
Code	Course name	EC	Q	Timeslot
<a href="#">4MM10</a>	Advanced computational continuum mechanics	5	GS1	D
<a href="#">4MM20</a>	Computational and experimental micromechanics	5	GS2	D
<a href="#">4MM50</a>	Fracture mechanics	5	GS3	C
<a href="#">4MM60</a>	Advanced and Additive Manufacturing	5	GS4	A

NF Track Electives – Fusion Engineering				
Code	Course name	EC	Q	Timeslot
<a href="#">5SVA0</a>	High voltage technology	5	GS2	A
<a href="#">5LEGO</a>	Pulsed power technology	5	GS3	D
<a href="#">4CM70</a>	Integrated system Design	5	GS2	E