

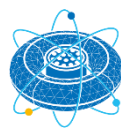
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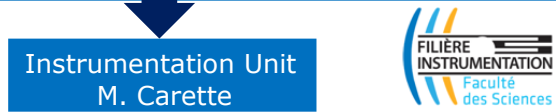
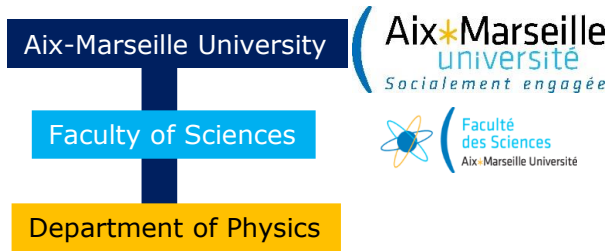
Flyer: New international course

**Master's degree
in Instrumentation, Measurement, Metrology**

Course: Instrumentation and
Measurement Science
for Major Nuclear Research Facilities



June 21-25, 2021, Prague



Vocational Bachelor's Degree: Professions in Instrumentation, Measurement and Quality Control

Master's Degree: Instrumentation, Measurement, Metrology

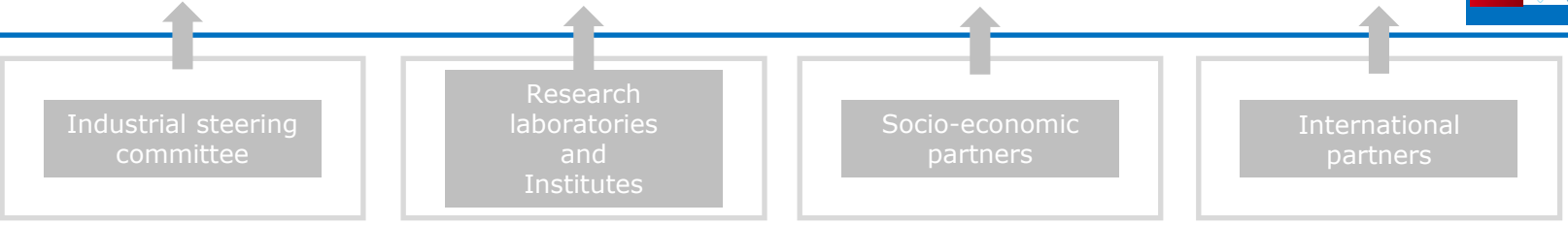
MI course Industrial Metrology	BEM course Engineering and Maintenance in Instrumentation and Automation	CC course Process Remote Control

M1			
M2: IME course Test Facilities Instrumentation Agreement with CEA/INSTN	M2: 3I course Engineering in Industrial Instrumentation	M2: CIS course Commercialization of Scientific Instrumentation	M2: MSD course Microsensors and Detection Systems

New course

M2: IMSci-Nu course
Instrumentation and Measurement Science for Major Nuclear Research Facilities

Apprentices and block-release training programs
 Initial training program
 Prior experimental learning and continuing education



Master's Degree Instrumentation, Measurement, Metrology (IMM)

International IMSci-Nu course:
Instrumentation and Measurement Science for Major Nuclear Research Facilities

Starting in September 2022

Contact: Christelle Reynard-Carette (christelle.carette@univ-amu.fr)

Units	ECTS	Modules	Total (hour)
Fundamentals in Fission and Fusion	6	Nuclear Physics	56
		Nuclear fission and fusion reactions	
		Radiation-Matter Interaction	
		Plasma, confinement, heat loading, interactions with PFC, material irradiation and damages	
Major nuclear instruments	6	TOKAMAKS, WEST installation, operation and control	49
		ITER and DEMO	
		Research reactors and MTR, JHR	
		Nuclear Power Plants	
		Reactor operating principle and control system	
		Reactor and tokamak experiments including TBM	
Nuclear Detection and Instrumentation and Fusion diagnostics	12	Other installations: accelerators, generators, ...	91
		Standardization in the nuclear industry	
		Radiation detection	
		Identification of sources of uncertainty	
		Nondestructive testing	
		Operational Reliability of nuclear instrumentation	
		Principle of radioprotection	
		Measurements and instrumentation under severe thermo-hydraulic conditions	
		Instrumentation for dismantling and remediation	
Extreme constraints for Tokamak measuring systems			
Modeling and Methods	6	Main diagnostics for ITER	53
		Instrumentation Ergonomics	
		Feasibility analysis	
		Particle transport modeling (course)	
		Particle transport modelling (practical)	
		Thermal and Fluid Modeling (course)	
		Thermal and fluid modeling (practical)	
		Experience feedback	
Documentary intelligence (patent)			
Total S1	30		249
Interculturality and international communication (MIT)	6	(Inter)cultural Intelligence	21
		Cultural Patterns & Variability (communicating effectively in the global workplace)	
		Communication Strategies for Intercultural Teamwork	
		Designing and Delivering Effective Sponsor Talks	
		Global Writers-Global Readers	
		Less is More (style and substance in writing up research)	
Research project	6	Strategic Communication	42
		Tutored research project with experimental and numerical activities	
Professionalization and Internship	18	Remote course and practical activities with MIT (NRL)	28
		Visits of major instruments (in France and abroad)	
		Technical seminars and invited lectures	
Total S2	30		91
TOTAL M2	60		340