



University Sultan Moulay Slimane, from November 7 to 11

Training program on the use of ICT in mathematics teaching, funded by the European Union through the Erasmus+ CBHE project MathICs.

Organizer: Prof. Hanaa Hachimi at hanaa.hachimi@usms.ac.ma.

		Teaching staff		
Professor	Department	University	Country	Course
Fouad Bennis	Automatique et Robotique	École Centrale de Nantes	France	Pedagogical Approach to hybrid education
José Carmona Tapia	Mathematics	Universidad de Almería	Spain	GeoGebra as a support for Mathematics education
Luis Oyonarte Alcalá	Mathematics	Universidad de Almería	Spain	SageMath as a support for Mathematics education











Fernando Reche Lorite	Mathematics	Universidad de Almería	Spain	R as a support for Mathematics education
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PROGRAM

MONDAY, NOVEMBER 7

SOFTWARE











	SageMath	GeoGebra	R	
9:00 - 10:45	Lists, Tuples, Sets & Dictionaries.	Introduction & General Overview.	Data Structures	
9.00 - 10.45	Programming I	Dynamic Text Messages	Importing Data	
10:45 - 11:15		Coffee breack		
11:15 - 13:00	Programming II	Using Conditionals	Basic Operation I	
	LUNCH			
	PEDAGOGICAL APPROACH			
15:00 - 16:15	Learning Theories I			
16:15 - 16:45		Coffee breack		
16:45 - 18:00	Workshop on Learning Theories			

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	TUESDAY, NOVEMBER 8				
		SOFTWARE			
	SageMath	GeoGebra	R		
9:00 - 10:45	Programming III	Using Sliders	Basic Operation II		
10:45 - 11:15	Coffee breack				
11:15 - 13:00	Arithmetic & Number Theory I	Creating Animations	Building Procedures. Graphics I		
	LUNCH				
	PEDAGOGICAL APPROACH				
15:00 - 16:15	Learning Theories II				
16:15 - 16:45		Coffee breack			
16:45 - 18:00	Workshop on Learning Theories				











Email MathICs: mathics@ual.es www2.ual.es/MathICs/

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		WEDNESDAY, NOVEMBER 9	
		SOFTWARE	
	SageMath	GeoGebra	R
9:00 - 10:45	Arithmetic & Number Theory II	Activity Menus I	Graphics II
10:45 - 11:15	10:45 - 11:15 Coffee breack		
11:15 - 13:00	Functions & Calculus. Graphics	Activity Menus II	Graphics III
	LUNCH		











	PEDAGOGICAL APPROACH		
15:00 - 16:15	Instructional Design		
16:15 - 16:45	Coffee breack		
16:45 - 18:00	Workshop on Instructional Design		

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THURSDAY, NOVEMBER 10	
SOFTWARE	











	SageMath	GeoGebra	R	
9:00 - 10:45	Matrices & Vectors	Randomized Questions I-II	R Commander I	
10:45 - 11:15	Coffee breack			
11:15 - 13:00	Equation Solving	Equation Solving Developing New Tools R Commander II		
	LUNCH			
	PEDAGOGICAL APPROACH			
15:00 - 16:15	Instructional Design			
16:15 - 16:45		Coffee breack		
16:45 - 18:00	Workshop on Instructional Design			

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PROGRAM

THURSDAY, NOVEMBER 10

Hardware for tehcnicians (parallel session): hybrid classroom











	wwwz.uai.es/iviatifics/		
9:00 - 9:15	Technical schema		
9:15 - 9:45	Equipment characteristcs and configuration practices: P1 - Audio and video. P2 - Whiteboards & other devices		
9:45 - 10:00	Practice 3: Management of an online class - Adobe Connect administrator / Zoom		
10:00 - 10:20	Practice 4: Recordings (use of hardware and online recordings)		
10:45 - 11:15	Coffee breack		
11:15 - 11:45	Practice 5: OBS		
11:45 - 12:30	Practice 6: Installation and use of NDI. Integration with OBS.		
12:30 - 13:00	Parctice 7: Troubleshooting		
LUNCH			
	Hardware for tehcnicians (parallel session): media room		
15:00 - 15:15	Technical schema		
15:15 - 16:15	Practice 1: Making a polimedia: preparations, recording, editing and publishing.		
16:15 - 16:45	Coffee breack		
16:45 - 17:15	Practice 2: NDI integration		
17:15 - 18:00	Practice 3: Connection of NDI elements between Hybrid Classroom and Media Classroom.		











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	FRIDAY, NOVEMBER 11
	PEDAGOGICAL APPROACH
9:30 - 10:45	e-learning Design
10:45 - 11:15	Coffee breack
11:15 - 12:30	Workshop on e-learning Design
	LUNCH
	HARDWARE











14:30 - 15:45	Hybrid and Media Classrooms. Uses. Using Openboard (I)	
15:45 - 16:15	Coffee breack	
16:15 - 17:30	Using Openboard (II). Using Adobe Connect (I-II)	





