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**“FOSTERING SOCIALLY DISTANCED AND INCLUSIVE ON
CAMPUS EDUCATION IN ARMENIAN HEIS”**

UNIVERSIDAD AUTÓNOMA DE MADRID (UAM)

**BEST PRACTICE COLLECTION & POLICY
PAPER ON TECHNOLOGY ENHANCED (TE)
TLA**

COUNTRY CASE – SPAIN

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This template is used to systematically collect and document best practices and infrastructure benchmarks. The information will directly feed into the eCAMPUS benchmark standards for e-learning multimedia platforms and smart classroom models in EU partner institutions.

General Information

EU Partner Institution	AUTONOMOUS UNIVERSITY OF MADRID
Country	SPAIN
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Section 1: Purpose & Context

This template covers:	Key output:
• E-learning multimedia platforms in use • Instructional technologies and tools • Digital infrastructure and connectivity • Technology-Enhanced (TE) classroom models • TE ecosystems and governance • Policies, standards and sustainability	Benchmark standards for e-learning multimedia platforms and smart classroom models for Armenian HEIs - WP4 public deliverable

Section 2: EU Partner HEI Profile

What is the institution's overall approach to digital transformation and e-learning?
There are several decennial plans around digital transformation starting at the end of last century and including e-learning. The current UAM 's overall approach to digital transformation and e-learning is part of the UAM 2025 Strategy (2016), a decennial plan. Also, in this decade, it is developed by successive UAM Master Plan, as part of President of UAM policies, and evaluated by a plan follow-up (UAM, 2026). The UAM 2025 Strategy include a strategic line devoted to “continuous improvement of teaching quality to favor the teaching-learning process” where “UAM promotes educational innovation both in the contents and in the methods and technologies used for the training of its students” (p.16) as well as online training (p.17). There are also

chapters devoted to technology (p.49-52), where it is analyzed: teaching quality, teachers' teamwork, data mining to assessment and literacy through ICT.

Other ideas are searching for applications of technology that can bring to a face-to-face university, afforded using digital educational content, blended learning and MOOCs (p.31), redesigning processes and optimization of electronic administration and equipping the different teaching spaces with the technological infrastructures (p.51).

The current Master Plan is the third of President of UAM mandate. It include seven strategic lines, where 2 of them are Studies and Digital UAM. For Studies, the current Master Plan included objectives and actions as: 3.1.7. use of AI in teaching. 3.5.7. Update educational technology platforms. 3.5.7.1. Deploy the UAMx platform on a Kubernetes cluster to improve performance and compatibility with resources developed by the Open edX community. 3.5.7.2. Include a console for learning monitoring and analysis on the UAMx platform. 3.5.7.3. Update the UAMx platform to version 15 and include new features. 3.5.8.1. Renew the range of recording templates for generating educational resources. 3.5.8.2. Renew the technological equipment in the UAD recording rooms. For Digital UAM, the Master Plan included objectives related to 6.1. Define and implement the UAM Digital Strategy 6.2. IT as support for Digital Transformation 6.3. Full integration of teaching with technological innovation 6.4. Coordinated development of university management platforms and services 6.5. Modernization of the relationship between users and UAM 6.6. Systematic, comprehensive, and transparent data management.

Year digital strategy was adopted	Responsible unit/office for digital education
2016	Teaching Support Unit + Faculty Portal + Moodle Team + IT Technical services

Section 3: E-Learning Multimedia Platforms

3.1 Learning Management System (LMS)

What LMS does the institution use?
Name: Moodle (Moodle Grado, Moodle Posgrado, Moodle Formación (UAMx)). Version: 4.5. Provider: Open-source (Moodle). https://share.google/BVIHDPt2ag9KowO7A

How long has the LMS been in use?	What percentage of courses actively use the LMS?
More than 20 years	99%

Which LMS features are most actively used by staff and students?

The most common resources can be divided into two types: Learning Resources and Activities. Learning Resources: Files and Folders, URLs, Pages. Activities: Assignments. Quizzes. Forums. Interactive content. Poll (Sandoval, 2025a).

How is the LMS integrated with other institutional systems?

Moodle is a comprehensive digital ecosystem integrated with authentication, student information system, academic management, library, plagiarism detection tools, digital libraries, and online assessment systems, and complementary technologies such as Microsoft Teams, UAMx, Office 365, Genially, and Wooclap (Sandoval, 2025a).

3.2 Multimedia and Video Tools

What tools are used to create, host, and deliver multimedia content (video, audio, interactive media)?

Office 365, Genially, Kahoot, Wooclap, Ready-to-Publish Studio, Multimedia Studio, Soundproof Booth (Sandoval, 2025a).

Are lecture capture or screen recording tools in use?

Yes, through Microsoft Teams.

Are interactive video or H5P-type tools used?

No. Only Genially media.

What is the policy on multimedia content ownership, storage, and accessibility?

There is not a policy about recorded lectures. Recorded lectures are stored during a year after the course, to support possible accreditation visit. They are captioned. UAMx, a platform form MOOC courses, has technology for subtitled video. Teams, a complementary platform, has video with subtitles in real time.

3.3 Collaboration and Communication Tools

What digital tools are used for online assessment, quizzes, and automated feedback?
Moodle quiz, Office 365, Genially, Kahoot, Wooclap
How does the institution ensure academic integrity in digital assessments?
Online assessment only occurs during pandemic. Then it implemented some processes, but now teaching is face to face.

Section 4: Instructional Technologies and Infrastructure

4.1 Hardware and Physical Infrastructure

What hardware infrastructure supports digital teaching across the institution?	
Staff equipment in the classes is desktop computer on the teacher's desk, projector and projection screen / videoconferencing and streaming system consisting of a 10x HD camera and ambient microphones, system for playing sound, wireless microphone (Derecho, n.d). Personal staff equipment is an UAM laptop. Students bring his own device. UAM offers connectivity (Eduroam network or VPN for remote work), computer labs, device loan schemes (notebooks). The management of IT resources, both for teaching teams and classrooms, is overseen by the Computer Lab staff (1,577 computers in approximately in fifty laboratories distributed across the campus, a half of them at Higher Polytechnic School). https://www.uam.es/uam/tecnologias-informacion/servicios/aulas-informatica The acquisition of new equipment follows the IT Equipment Supply policies, a four-year lease. Once the lease term expires, the equipment is replaced according to a schedule managed by the IT. https://www.uam.es/uam/tecnologias-informacion/servicios/suministro-material-informatico	
Is there a device loan programme for students?	Is there a BYOD (Bring Your Own Device) policy?
Yes, a daily device loan schemes (notebooks) through campus libraries.	No. There are not a BYOD policy. Regular classrooms do not have computers; those who do not request a loaner computer must bring their own and uses the UAM wifi.

Describe the institution's network and connectivity infrastructure.

UAM offers connectivity (Eduroam network or VPN for remote work) <https://www.uam.es/uam/wifi#> The wireless network provides additional infrastructure to the wired network. It is designed to offer sufficient indoor coverage according to the 2.4 and 5 GHz standards. Coverage is virtually complete. Wireless card requirements: IEEE 802.11 a/g standard. Compatibility with WPA-Enterprise and WPA2-Enterprise. Operating system requirements: support for WPA and/or WPA2. Microsoft Windows, Mac OS. Video streaming could be restricted in some apps.

4.2 Software and Licensing

What software licences does the institution provide to staff and students for digital teaching?

Software licenses including Office 365 ProPlus, MATLAB with Simulink, Kahoot licensing tools, and Genially licenses for faculty, in addition to institutional antivirus software and VPN. The software is primarily available for distribution, installation, and maintenance to teaching, research, and administrative staff.

The software is usually available on the IT download portal, requiring authentication with UAM credentials.

<https://www.uam.es/uam/tecnologias-informacion/servicios/programas-suministro-instalacion-mantenimiento>

4.3 Accessibility and Inclusive Technology

What accessibility technologies and provisions are in place?

There are assistive technologies included in regular software provided by UAM. There are also some classes equipped with hearing loops.

Are digital accessibility standards formally applied (e.g. WCAG)?

Yes. <https://www.uam.es/uam/ura-web-moviles> according to Spanish legal requirements.

Is there dedicated support for students with disabilities in digital learning?

Yes. The university has a Protocol for Assisting Persons with Disabilities and for following the class with notes, readings, or

	exercises, handling books, electronic presentations, using the blackboard, etc., incorporate sign language interpreters, provide Braille transcription, purchase Braillespeak for the student, install amplifiers, and make typhlotechnological adaptations.
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4.4 IT Support and Training for Staff

What IT support and training is available to teaching staff for instructional technology?
To ensure technical support and the acquisition of specific software, faculty members can contact the User Support Center (CAU). Teaching Innovation program at UAM (Sandoval, 2025b) is spearheaded by the Teaching Support Unit (Unidad de Apoyo a la Docencia - UAD). This initiative aims to transform the teaching-learning process through faculty-led innovation. The UAD is structured around three main pillars: teacher training, teaching innovation, and digital teaching support. The program encourages educators to rethink methodologies, embrace technology, and experiment with new teaching approaches. It targets all academic staff, fostering teamwork and focusing on active, skills-based learning to enhance student outcomes.

Is there a dedicated Learning Technology team or centre?	Is staff training in instructional technology mandatory?
Learning Technology team is a mixed team of Teaching Support Unit + Faculty Portal + Moodle Team + IT Technical services. It include around 30 people. https://www.uam.es/uam/apoyo-docencia	No

4.5 Pedagogical Approach

Methods used	How technology enhances learning
Teaching Support Unit is using a project method to enhance changes in teaching.	It is described at Sandoval (2025a, 2025b). The starting ideas are: Enhance teaching and learning through pedagogical

	experimentation, foster teamwork among faculty across disciplines, improve student learning by focusing on active, skills-based approaches and create a sustainable culture of reflection and innovation in teaching.
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Section 5: Technology-Enhanced (TE) Ecosystems and Smart Classrooms

5.1 Smart Classroom Models

Describe the main smart classroom model(s) used at this institution.
The closest thing to smart classrooms at the UAM are the teaching laboratories. These spaces are equipped with advanced technology. They offer Windows/Linux operating systems and electronic instrumentation. Capacity: Between 20 and 36 computers per room, with projectors and audio systems. Technical Equipment: Power supplies, oscilloscopes, function generators, and multimeters in several labs. Specialization: Some labs are dedicated to radiocommunications and digital television and have anechoic chambers. Variety: Specialized teaching laboratories exist in other faculties, such as the Prehistory lab, Archaeology lab and Education lab (videoconferencing and streaming system consisting of a 10x HD camera and ambient microphones, microphones, display screens, lecture capture, 3D printers).

How many smart classrooms exist across the institution?	What percentage of all teaching rooms are smart?
4	1%

Are there different tiers or types of smart classroom (e.g. basic, standard, advanced)?
Smart classrooms are adapted to teaching variety of subjects.

5.2 Hybrid and Blended Teaching Spaces

Are there classrooms specifically designed for hybrid teaching (simultaneous in-person and online students)?
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No. Only seminars and laboratories are equipped with videoconferencing and streaming systems consisting of a 10x HD camera and ambient microphones.

Are hybrid classrooms a strategic priority?	What is the main driver for hybrid classroom investment?
The videoconferencing and streaming system consisting of a 10x HD camera and ambient microphones is not expensive and it is included in regular classes.	Cost falling.

5.3 Specialist TE Learning Spaces

Are there specialist technology-enhanced spaces beyond standard classrooms?
It was described at 5.1.

How are these specialist spaces managed, booked, and made accessible to students and staff?
Some of them are freely accessible, and others, with more specific equipment, such as 3D printers or unique equipment, require the presence of a supervisor or teacher.

5.4 TE Ecosystem Governance and Standards

How does the institution define, maintain, and update its smart classroom and TE standards?
Every year there is an academic officer who collects all the requests to implement teaching laboratories.

What procurement and lifecycle management process is followed for TE infrastructure?
Every year

Is there a formal TE classroom specification document?	Is there a sustainability or carbon reduction strategy for TE infrastructure?
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Yes. https://www.uam.es/uam/tecnologias-informacion/servicios/suministro-material-informatico University regulations (UAM, 2022)	Yes. There are included in the UAM Strategy 2025 (UAM, 2016). There is also an annual report about carbon reduction strategy that analyse teaching and research impact (UAM, 2025).
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Section 6: Maturity Assessment and Benchmarking

6.1 Overall Benchmarking Summary

What is the single most impressive or distinctive practice you observed at this institution?
The idea of projects supported by a Learning Technology team. It is cheap, supportive, oriented, scalable and adoption by other faculty members could be progressive.
What is the most distinctive feature you can describe for your institution?
Scalability, resources and liberty to adopt technology to enhance learning.

Is this model potentially transferable to Armenian HEIs?	What would be the main barriers to transfer?
Fully	Time to implementation.

Section 7: Recommendations for Armenian HEIs

7.1 Priority Recommendations

What are your top 3 recommendations for Armenian HEIs based on this visit?
1. Teacher training, because it is fundamental to understand and develop change. It could be offered in different formats (intensive-long time, presential-online, individual-teams, broad-just in time). 2. Encouraging teaching innovation, because is the gate to the change. Through meetings, awards, recognitions, publications, support for exchanges and trips to learn about other realities. 3. Digital teaching support, because technology fails and it is very important to faculty embrace technology. Planning and implementing IT services and technology purchasing policy.

7.2 Quick Wins vs Long-Term Investments

Quick wins (achievable within 1 year)	Longer-term investments (2-4 years)
Each successful project could engage more faculty members.	It is difficult to define because it depends on starting point, previous policies about enhancing learning with technology, management plan, IT services, learning centre readiness, among others. To do that could be possible to spend 4 years.

Section 8: Best Practice Examples

8.1 Best Practice

Guidance: Describe a key TE-TLA best practice

Title: Dissemination of innovations
Problem addressed
Share with the rest of the faculty the advantages and opportunities to improve teaching.
Description
Organize a bank of best practices that is presented at an annual meeting and shared in a database for use.
Technologies used
Site of University.

8.2 Impact & Recommendations

Key Results
Progressive adoption of improvements in teaching and learning with technology.
Student engagement
A change only oriented to face-to-face teaching could be easy to accept for students because nothing is changing in the way of learning. Students must be participative and collaborative to understand the power of technology and be engaged.
Top 3 recommendations

1. Teacher training. 2. Encouraging teaching innovation and shared reflection about. 3. Digital teaching support.
Transferability
Diffusion of experiences could be supportive. Faculty working together could facilitate transferability.
Barrier
This way of teaching means accepting experimentation and failure.

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