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Setting up Digital Research Infrastructure and e-Learning Platforms

Dates: 19, 20, 21 October 2026

Time: 1400-1700 EAT

Trainers:

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Registration Link: <https://bit.ly/4dcuA50>

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Project Title: Strengthening Teaching and Research Capacities in Recently Established Uganda Universities to Deliver Climate Resilience and Green Energy Solutions to Farming Communities

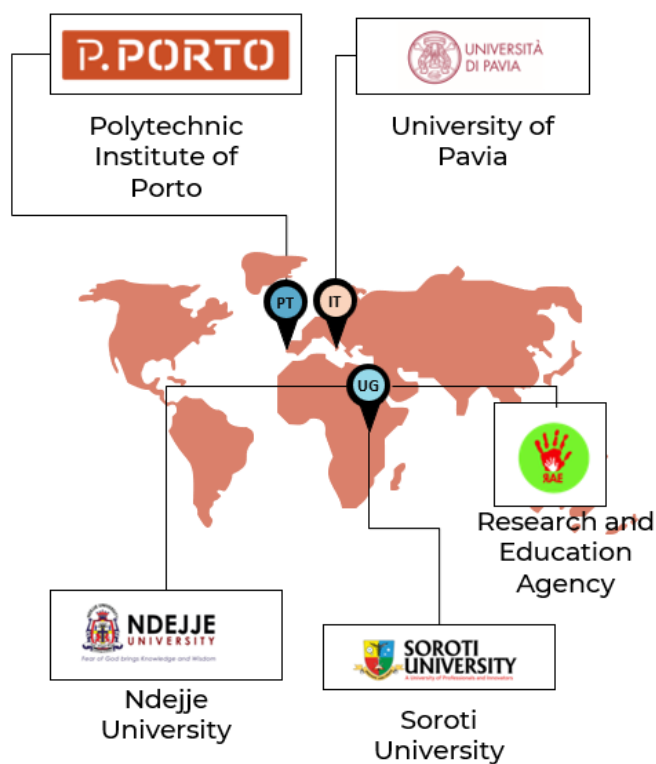
Acronym: STRCUU

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Lead Institution: Ndejje University, Uganda

Partner institutions





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1 Introduction

Universities across sub-Saharan Africa are increasingly called upon to conduct and disseminate research, deliver quality education at scale, and engage in international partnerships. Digital research infrastructure and e-learning platforms have become essential enablers of this mission, supporting data management, open access publishing, virtual collaboration, and technology-enhanced learning.

However, many universities, particularly newly established institutions, face significant challenges in setting up and sustaining these digital systems. Common difficulties include:

- Limited technical expertise in ICT infrastructure and network management
- Lack of experience with learning management systems and digital content authoring
- Insufficient policies for data governance, open access, and digital security
- Inadequate connectivity and hardware to support remote and blended learning
- Difficulty sustaining digital systems beyond initial setup without institutional capacity

A common pattern is that infrastructure investments yield limited long-term impact when staff lack the skills to manage, maintain, or evolve digital systems. Sustainable digital transformation in higher education requires not only technical resources but also competent human capital capable of operating and continuously improving them.

This training is designed to equip university staff with the knowledge and skills to plan, deploy, and manage digital research infrastructure and e-learning platforms in a sustainable and contextually appropriate manner.

2 Objectives

This training aims to build the capacity of university staff to design, implement, and maintain digital research infrastructure and e-learning platforms aligned with institutional needs and international standards.

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2.1 Learning objectives

This training empowers participants to:

- Understand the key components of digital research infrastructure in a university context
- Select and deploy appropriate learning management systems (LMS) and e-learning tools
- Design and produce digital learning content suited to the institutional context
- Explore LMS facilities for learning assessment
- Plan and implement research data management systems and open access repositories
- Apply principles of digital governance, data security, and user access management
- Develop institutional policies to support digital sustainability and staff capacity growth
- Evaluate and monitor the quality and effectiveness of digital learning environments
- Identify barriers to digital inclusion and develop strategies to address them

3 Target audience

The training is intended for:

- Academic and technical staff responsible for ICT and e-learning systems
- Academics interested in developing and delivering digital or blended learning courses
- University administrators and leadership involved in digital strategy and governance
- Early-career researchers seeking skills in digital research tools and open science
- Students, mainly at doctoral and master's levels, engaged in digitally-supported research

4 Content

The training is structured into three main components covering the foundations of digital research infrastructure, the setup and management of e-learning platforms, and strategies for institutional sustainability and capacity development.

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4.1 Part I: Education and research digital infrastructures planning and design

This component introduces participants to the concept of digital research infrastructure and supports them in assessing institutional needs and planning appropriate solutions.

It covers:

- Overview of digital research infrastructure components (servers, networks, storage, connectivity)
- Needs assessment frameworks for institutional digital readiness
- Open-source and low-cost infrastructure solutions for resource-constrained environments
- Cloud vs. on-premise approaches: trade-offs and contextual fit
- Planning digital infrastructure aligned with research and teaching priorities

4.2 Part II: Education platforms

This component focuses on the practical deployment and management of e-learning platforms and digital content tools.

It addresses:

- Overview of learning management systems (LMS): Moodle, Canvas, Google Workplace and alternatives
- LMS installation, configuration, and user management
- Designing and structuring online and blended learning courses
- Digital content creation: video, interactive modules, and assessments
- Integrating multimedia resources and third-party tools with the LMS
- Student engagement and analytics in digital learning environments

4.3 Part III: Research and academic cooperation platforms

This component focuses on research and academic cooperation platforms and on the long-term sustainability of digital systems and the development of institutional capacity to maintain and evolve them.

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It covers:

- Digital platform for researchers and academics to share ideas, find projects, and build collaborations
- Institutional policies for digital governance, data protection, and open access
- Research data management: standards, repositories, and FAIR principles
- Staff training strategies and building internal ICT support capacity
- Monitoring and evaluation of digital systems and e-learning quality
- Digital inclusion: addressing access barriers and equity in technology use
- Strategies for sustaining digital infrastructure beyond project funding cycles
- Engaging stakeholders and building a culture of digital innovation

5 Methodology

The training adopts a practical, participant-centred, and interactive approach.

Key methodological elements include:

- Conceptual input sessions to introduce key principles
- Hands-on exercises (e.g., LMS configuration, course design, data repository setup)
- Case studies based on real infrastructure projects and e-learning deployments
- Group discussions and peer learning
- Guided reflection on participants' institutional practices

The methodology emphasises learning by doing, enabling participants to directly apply concepts to their own contexts.

6 Structure and duration

The training is designed as a three-day programme, combining synchronous sessions and individual/group work.

Each day includes approximately 3 hours of synchronous training, complemented by 1.5 to 2 hours for homework assignments.

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Total effort accounts for 15 working hours.

6.1 Day 1: Research infrastructure planning and design

- Digital infrastructure landscape and institutional readiness
- Needs assessment and infrastructure planning
- Infrastructure solutions for research and teaching
- Practical workshop: institutional digital readiness audit

6.2 Day 2: Education platforms

- LMS selection, installation, and configuration
- Course design and digital content creation
- Platform integration and student management

6.3 Day 3: Research and academic cooperation platforms

- Digital platform for researchers and academics to share and co-create
- Digital governance, data management, and open access policies
- Staff capacity development and institutional support models
- Monitoring, evaluation, and quality assurance of digital systems
- Sustainability planning and stakeholder engagement

7 Learning outcomes and practical outputs

At the end of the training, participants are expected to:

- Demonstrate a clear understanding of digital research infrastructure components and their institutional roles
- Select and configure appropriate e-learning platforms suited to the institutional context
- Design and develop digital learning content aligned with course objectives
- Apply principles of research data management and open access in their work
- Implement basic digital governance and data security practices
- Develop a sustainability plan for digital systems at their institution

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8 Conclusion

Setting up digital research infrastructure and e-learning platforms represents a transformative opportunity for universities to enhance the quality, reach, and relevance of their research and teaching. However, sustainable digital transformation depends not only on the availability of tools and systems but also on the capacity of staff to deploy, manage, and continuously improve them.

This training contributes to building that capacity by equipping university staff with the knowledge and practical skills to establish and sustain digital systems that serve their institutional mission, support research excellence, and expand access to quality education.

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