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Ss. Cyril and Methodius University in Skopje

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OPEN SCIENCE POLICY
of
Ss. Cyril and Methodius University in Skopje

2026-2030

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Skopje

Open Science Policy of the Ss. Cyril and Methodius University in Skopje (2026–2030)

Preamble

The Ss. Cyril and Methodius University in Skopje (hereinafter: the University), as the leading higher education and research institution in the Republic of North Macedonia, reaffirms its strategic commitment to the principles and practices of Open Science. This policy reflects the University's vision to foster a transparent, inclusive, and collaborative research environment that maximises the accessibility, visibility, and societal impact of scientific knowledge.

This policy is aligned with key international frameworks, including the **UNESCO Recommendation on Open Science (2021)**, the objectives of the **European Open Science Cloud (EOSC)**, and the **European Research Area (ERA)**. It also builds on national efforts to promote responsible research and innovation in the digital age.

In recognition of the growing importance of institutional coordination and support, the University has established a dedicated **Open Science Centre**. The Centre serves as the central hub for implementing this policy by offering guidance, capacity building, monitoring, and infrastructure support across the University. It facilitates collaboration among faculties, research institutes, and national and international partners in advancing Open Science practices.

Through this policy, the University seeks to support its researchers and staff in adopting Open Science as a default approach, and to contribute actively to the global movement for equitable, sustainable, and impactful research.

1. Rationale and Vision

The primary purpose of this policy is to promote **responsible, inclusive, and transparent scientific practice** at the Ss. Cyril and Methodius University in Skopje (the University), in line with international standards and evolving expectations around research integrity, accessibility, and social responsibility.

Open Science enables the widest possible dissemination of scientific knowledge, fosters innovation through collaboration, enhances research quality through transparency and reproducibility, and strengthens trust between science and society. By adopting this policy, the University recognises the value of **equitable access to knowledge as a public good** and affirms its institutional responsibility to lead by example in the national and regional research ecosystem.

This policy is grounded in the values and principles articulated in the **UNESCO Recommendation on Open Science**, including:

- **Equity and fairness** in access to scientific resources and participation in knowledge production;
- **Openness and collaboration** across disciplinary, institutional, and national boundaries;
- **Diversity and inclusiveness** of knowledge systems, methodologies, and voices;
- **Integrity and responsibility** in research conduct and communication;
- **Sustainability** of research practices and infrastructures.

Vision for 2030

By 2030, the University aims to support a research environment in which Open Science practices are increasingly adopted, institutionally supported, and embedded in key processes such as research dissemination, infrastructure planning, and training. The University seeks to make Open Science a viable and attractive pathway for researchers, supported by clear guidance, recognition, and community engagement.

This vision includes:

- Gradual integration of open access and FAIR principles into the research lifecycle;
- Expanded opportunities for engagement with societal actors through participatory research;
- Strengthened institutional capacity to support Open Science through training and infrastructure;
- Increased visibility, interoperability, and societal value of the University's research outputs;
- Active contribution to national and European Open Science initiatives and infrastructures.

The Open Science Centre will play a central role in coordinating these efforts in collaboration with university units, fostering an enabling environment rather than imposing rigid requirements.

2. Scope and Jurisdiction

This policy is adopted pursuant to the Law on Higher Education of the Republic of North Macedonia and the Statute of the Ss. Cyril and Methodius University in Skopje. It serves as an institutional framework for advancing Open Science practices across the University, aligned with national and international standards.

The policy applies to:

- **All academic and research staff** employed at the University, including permanent and temporary teaching and research positions;
- **Doctoral and postdoctoral researchers**, as well as **students involved in research activities**, especially those contributing to thesis or project work resulting in scientific outputs;
- **University research infrastructure and services**, including institutional repositories, digital platforms, and research support units.

While this policy is institutionally binding for the above categories, **external collaborators**, including visiting researchers, affiliated partners, and representatives of civil society or industry, are **encouraged to engage voluntarily** in alignment with the University's Open Science principles when working on joint projects or using university infrastructure.

In order to support field-specific needs and decentralised implementation, **faculties, research institutes, and other university units are encouraged to develop or revise their own internal Open Science policies**. These policies should be compatible with this institutional framework and may address additional disciplinary, infrastructural, or contextual considerations. The **Open Science Centre** is available to provide guidance and support in this process.

3. Roles and Responsibilities

The successful implementation of this policy relies on the active engagement and coordination of multiple stakeholders within the University. Roles and responsibilities are defined to ensure clarity, accountability, and collaboration across all levels of the institution.

Open Science Centre

The **University Open Science Centre** serves as the central coordinating and support unit for the implementation of this policy. Its responsibilities include:

- Providing **guidance, training, and capacity-building** on Open Science practices;
- Supporting researchers and staff in the use of **institutional and national Open Science infrastructures**;
- Developing and disseminating **practical tools and resources** (e.g. templates, guides, FAQs);
- Monitoring policy uptake and compiling **progress indicators**;
- Supporting **policy development** at the level of faculties and institutes;

- Acting as a **liaison** with national and European Open Science initiatives and infrastructures (e.g. EOSC, OpenAIRE and others).

Researchers and Research Students

All researchers, doctoral candidates, and students involved in research activities at the University are recommended to:

- Actively engage with Open Science principles and practices as appropriate to their discipline;
- Ensure the **timely deposit** of research outputs in trusted repositories, in accordance with this policy;
- Use institutional **persistent identifiers** such as ORCID and DOI where applicable;
- Adhere to ethical, legal, and disciplinary standards in data sharing and publication;
- Seek support from the Open Science Centre and relevant university services when needed.

Research Support Staff (Libraries, IT, Administrative Units)

Support staff play a crucial role in enabling Open Science at the University. Their responsibilities include:

- Providing **technical support** for repository use, metadata standards, and platform interoperability;
- Offering **training and reference services** related to publication strategy, licensing, FAIR data, and research data management planning;
- Supporting the implementation of **open-source platforms**, persistent identifiers, and infrastructure integration.

University Management and Leadership

The University's Rectorate, Senate, and leadership structures are responsible for:

- Ensuring that Open Science principles are reflected in **institutional strategies, funding priorities, and quality assurance processes**;
- Supporting the integration of Open Science considerations in **research evaluation, academic promotion, and institutional reporting**;
- Providing **governance and oversight** for the activities of the Open Science Centre and ensuring it is appropriately resourced.

4. Pillars of Open Science at the University

The University adopts a broad and inclusive understanding of Open Science, in line with the UNESCO Recommendation, which defines Open Science as encompassing not only open

access to scientific knowledge but also the infrastructures, collaborations, and knowledge systems that support a transparent and participatory research culture.

This section outlines the four key pillars of Open Science that the University promotes and supports through this policy.

4.1 Open Scientific Knowledge

The University supports open access to scientific publications, research data, and other scholarly outputs as a means of increasing the visibility, reuse, and societal impact of research. The University:

- Encourages both **green and gold open access** models in accordance with disciplinary norms;
- Requires the **deposit of peer-reviewed scientific publications** in the institutional repository, subject to copyright and embargo limitations;
- Mandates the use of **persistent identifiers** (e.g., ORCID for researchers, DOI for outputs) to improve discoverability, attribution, and interoperability;
- Supports the development and dissemination of **open educational resources (OER)** created within research and teaching activities.

4.2 Open Science Infrastructures

The University provides and promotes the use of high-quality, interoperable digital infrastructures that support Open Science practices throughout the research lifecycle. These include:

- The **institutional repository** for storing and sharing publications, data, and educational materials;
- Integration with the **European Open Science Cloud (EOSC)** and other trusted platforms that support data sharing and collaboration;
- Use of the **national Open Science Lab**, hosted by the Faculty of Computer Science and Engineering (FINKI), for experimentation, onboarding, and training in open workflows;
- Adoption of **technical standards** for metadata, open file formats, and persistent identifiers to ensure interoperability, accessibility, and long-term preservation.

4.3 Engagement with Societal Actors

The University recognises the importance of **engaging non-academic stakeholders** in research processes as part of a more inclusive and impactful approach to science. To support this:

- The University **encourages participation** in citizen science, co-creation, crowdsourcing, and similar forms of collaborative research;
- Faculties and researchers are invited to explore opportunities for **public engagement and participatory approaches**, particularly in areas of societal relevance;

- The **Open Science Centre** may assist in identifying and promoting case studies that illustrate successful models of societal engagement.

These practices are encouraged but not mandatory, acknowledging the diversity of disciplines and research methodologies.

4.4 Dialogue with Other Knowledge Systems

the University supports a pluralistic view of knowledge production that values **dialogue with diverse epistemologies**, including local, experiential, and non-formal knowledge systems. In support of this:

- Interdisciplinary and transdisciplinary research that bridges academic and non-academic knowledge is recognised and supported;
- Researchers are encouraged to approach knowledge co-creation with respect, transparency, and awareness of ethical and cultural considerations;
- Where relevant, **engagement with other knowledge systems should be documented and acknowledged** in research outputs.

5. Access to Research Outputs

Ensuring open, timely, and responsible access to the results of publicly funded research is a central objective of the University's Open Science policy. This section outlines how access should be provided for various types of research outputs, in line with FAIR principles (Findable, Accessible, Interoperable, Reusable) and legal, ethical, and disciplinary standards.

5.1 Types of Research Outputs Covered

This policy applies to the following categories of research outputs:

- **Scientific publications**, including peer-reviewed journal articles, monographs, conference proceedings, and book chapters;
- **Research data**, including raw data, processed data, metadata, data management documentation, and other scientific documentation;
- **Research software and code**, especially when developed in the context of funded research projects;
- **Open Educational Resources (OER)** derived from research-based teaching and learning materials.

Additional categories such as dissertations, thesis, presentations, working papers, preprints, and registered reports are also encouraged for deposit when appropriate.

5.2 Requirements and Recommendations

The University sets the following expectations for access to research outputs:

- **Deposit:** Researchers are required to deposit accepted versions of scientific publications in the **institutional repository**, in accordance with legal requirements and publishers' requirements. Dissertations, thesis, data, software, and OERs should also be deposited in institutional or **trusted external repositories**.
- **Timing:** Deposit should occur **as soon as possible after acceptance or creation**, ideally at the time of publication, and no later than six months after.
- **Licensing:** Use of **open licences** is strongly encouraged:
 - **CC BY** or equivalent for publications and OERs;
 - **Open Source Initiative (OSI)-approved licences** for software;
 - **CC0** or **CC BY** for research data, unless legal, ethical, or confidentiality concerns require access restrictions.
- **Persistent Identifiers (PIDs):** All deposited outputs should be assigned appropriate PIDs (e.g. DOI for publications and datasets, ORCID for authors, RAiD or ROR where applicable).
- **Reuse and Preservation:** Outputs should be deposited in formats that allow for reuse, machine-readability, and long-term preservation. Researchers should include **Data Management Plans (DMPs)** for projects involving data collection or reuse.

5.3 Exceptions and Conditions

The University recognises that in certain cases, **immediate open access may not be possible** due to:

- Legal restrictions (e.g. copyright, intellectual property);
- Privacy or confidentiality concerns (e.g. personal data, sensitive content);
- Commercial agreements or third-party obligations.

In such cases, **embargo periods**, restricted access, or anonymisation techniques may be used in accordance with applicable laws and institutional procedures. The **Open Science Centre** and university legal services can advise researchers on handling such exceptions.

6. Training and Capacity Building

The transition to Open Science requires not only technical infrastructure and policy frameworks, but also the development of appropriate **skills, awareness, and support systems**. the University

recognises that training and capacity building are essential to enable researchers, students, and support staff to confidently engage with Open Science practices.

6.1 Role of the Open Science Centre

The **Open Science Centre** is responsible for coordinating and supporting training and awareness-raising efforts across the University. Its responsibilities in this domain include:

- Organising **awareness events**, workshops, and seminars on topics related to Open Science;
- Developing or curating **training materials** (online or in-person) tailored to the needs of different user groups;
- Offering **consultation and practical guidance** on data management planning (DMPs), FAIR principles, licensing, open access publishing, and the use of identifiers and repositories;
- Facilitating participation in **national and European training initiatives**, including EOOSC-related programmes.

6.2 Target Groups and Formats

Training activities should be inclusive and targeted to meet the needs of diverse groups, including:

- **Researchers and research groups**, including early-career researchers, on practical aspects of Open Science in their field;
- **Doctoral and master's students**, to integrate Open Science into research training and thesis work;
- **Research support staff**, such as librarians, IT staff, and project managers, on topics like infrastructure standards, metadata, repositories, and licensing.

Formats may include structured workshops, drop-in sessions, one-on-one consultations, short videos or guides, and participation in national or international training networks.

6.3 Institutional Support and Integration

The University encourages the **integration of Open Science competencies** into existing staff development and doctoral training programmes. Faculties and institutes are invited to work with the Open Science Centre to embed Open Science training into:

- PhD curricula or research methodology courses;
- Internal project onboarding or data management workflows;
- Grant proposal support and project lifecycle management.

Training participation may be acknowledged as part of staff professional development, subject to faculty-level procedures.

7. Research Assessment and Recognition

The University recognises that enabling the transition to Open Science also requires the evolution of how research performance is assessed and valued. While formal mechanisms for recognition are still under development, the University supports a culture in which open and responsible research practices are acknowledged and encouraged.

7.1 Inclusion of Open Science in Evaluations

Where appropriate and relevant, **Open Science contributions may be included in research assessment processes** such as:

- Academic hiring and promotion;
- Internal funding or awards applications;
- Research performance reviews.

Recognised Open Science contributions may include (but are not limited to):

- Deposited datasets and software in trusted repositories;
- Contributions to open-source tools or platforms;
- Open peer reviews or preprint publications;
- Engagement in citizen science projects or co-creation with societal actors;
- Use of open educational resources in teaching and research-based learning.

While these contributions may not yet carry formal weight in all evaluations, **their inclusion is encouraged** to reflect a more comprehensive view of research impact and engagement.

7.2 Recognition Measures

The University commits to fostering visibility and informal recognition of Open Science contributions through lightweight, non-intrusive measures such as:

- Featuring good practices and success stories on institutional websites and newsletters;
- Highlighting exemplary Open Science projects during public events and university reporting;
- Exploring options for internal recognition (e.g. certificates, OS-themed events, showcases) coordinated by the **Open Science Centre**.

7.3 Alignment with Broader Reform Initiatives

The University supports international efforts to reform research assessment frameworks to align with Open Science principles. In particular:

- The University endorses the **values of the Agreement on Reforming Research Assessment (CoARA)** and will monitor its development;
- Any future changes to assessment practices at the University will be pursued in coordination with relevant university bodies, respecting disciplinary diversity and academic freedom;
- The **Open Science Centre** will facilitate internal discussions and capacity building on alternative metrics, narrative CVs, and broader impact indicators.

8. Monitoring and Evaluation

The University recognises that effective implementation of Open Science practices depends not only on policy adoption, but also on regular **monitoring, feedback, and adaptation**. The aim of monitoring is not to enforce compliance, but to inform improvement, identify gaps, and highlight good practices.

8.1 Coordination and Responsibility

The **Open Science Centre** is responsible for coordinating the monitoring and evaluation activities related to this policy. Its role includes:

- Collecting and analysing relevant indicators of policy uptake;
- Gathering feedback from researchers, students, and support staff;
- Reporting findings to university management and the broader academic community;
- Suggesting adjustments and support measures based on evidence and emerging needs.

8.2 Key Performance Indicators (KPIs)

The following **basic indicators** will be tracked and reported annually, where feasible:

- Percentage of **open access publications** affiliated with the University;
- Number and diversity of **research outputs deposited** in the institutional repository (e.g. datasets, software, OERs);
- Number of researchers using **ORCID** and other persistent identifiers;
- Participation rates in **Open Science training activities**;
- Number of research projects including a **Data Management Plan (DMP)**;
- Qualitative feedback on **barriers and enablers** experienced by researchers.

These indicators may be refined over time, in consultation with university units and based on available infrastructure and resources.

8.3 Approach to Non-Compliance

This policy is designed to **encourage and support** the adoption of Open Science, not to impose penalties. The University does not foresee formal sanctions for non-compliance at this stage. Instead:

- Support services (e.g. OS Centre, libraries, IT) are available to help researchers overcome challenges;
- Faculties and institutes are encouraged to **foster a supportive culture** through discussion and example;
- Any observed gaps or areas of low uptake will be addressed through targeted capacity building or clarification of procedures.

9. Review and Updating of the Policy

Open Science is a rapidly evolving domain, shaped by emerging technologies, new policy frameworks, and evolving research practices. To remain relevant, effective, and aligned with international developments, this policy must be periodically reviewed and updated.

9.1 Review Cycle

- This policy will be **formally reviewed every five years**, or earlier if significant changes in national or international Open Science frameworks occur.
- The next scheduled review will take place in **2030**.

9.2 Coordination of the Review

- The **Open Science Centre** will coordinate the review process in collaboration with relevant stakeholders, including:
 - Doctoral school;
 - Research committees and ethics bodies;
 - Representatives of the academic and research support staff.
- The review will include:
 - Evaluation of policy uptake and relevance;

- Consideration of feedback from the academic community;
- Alignment with updated legal, national, or European-level Open Science requirements.
- The final revised policy will be adopted through the regular university decision-making processes and published in accordance with Open Science best practices and standards.

10. Publication, Licensing, and Technical Features

To ensure transparency, reusability, and accessibility, the Open Science Policy itself must follow the same standards it promotes. The University commits to making this policy a **FAIR (Findable, Accessible, Interoperable, Reusable)** document.

10.1 Repository Deposit and Identifier

- The official version of this policy will be **deposited in the the University institutional repository**, alongside any future updates.
- It will be assigned a **persistent identifier (PID)** to ensure stable citation, referencing, and interoperability with other policy frameworks and systems.

10.2 Licensing

- This policy will be licensed under **Creative Commons Attribution (CC BY)**, allowing others to copy, adapt, and reuse the content with appropriate credit.
- This licensing choice reflects the University's commitment to openness, transparency, and sharing of institutional knowledge.

10.3 Language and Accessibility

- The policy will be made publicly available in both **Macedonian** and **English** to ensure accessibility for national and international audiences.
- Additional formats or translations may be provided based on demand or institutional partnerships.

10.4 Machine Readability

- A **machine-readable version** of the policy will be published with **structured metadata** to support discoverability via aggregators, search engines, and Open Science policy registries (e.g. ROARMAP, OpenAIRE, EOSC Observatory).
- The policy will be compatible with current **interoperability standards**, facilitating integration with research information systems (CRIS), repository networks, and policy monitoring tools.

Annex 1: Glossary

| Term | Definition |
|---|--|
| Open Science (OS) | A set of principles and practices that make scientific research more accessible, transparent, and collaborative across the research lifecycle. |
| Open Access (OA) | Free, immediate, and unrestricted access to scholarly publications and other research outputs (datasets, source code, scientific documentation, etc.) online. |
| FAIR Principles | Guidelines to make data Findable, Accessible, Interoperable, and Reusable. |
| Institutional Repository | A digital platform managed by the University for storing, preserving, and providing access to research outputs. |
| Persistent Identifier (PID) | A stable, unique reference to a digital object or person (e.g. DOI, ORCID, ROR). |
| DOI (Digital Object Identifier) | A unique alphanumeric string used to identify and link to research outputs. |
| ORCID | A unique digital identifier for researchers that connects them to their research activities and outputs. |
| Data Management Plan (DMP) | A formal document outlining how research data will be managed, stored, and shared. |
| Open Educational Resources (OER) | Teaching, learning, and research materials that are freely available for use, adaptation, and distribution. |
| Open Peer Review | A review process where identities of authors and reviewers may be disclosed, and/or review reports are published openly. |
| Citizen Science | Scientific research conducted in collaboration with or by non-professional scientists or members of the public. |
| European Open Science Cloud (EOSC) | A European initiative to provide a federated infrastructure for research data and services. |
| OpenAIRE | A European infrastructure supporting Open Science by interlinking research outputs and enabling compliance with funder mandates. |
| OSC | Open Science Centre at the Ss. Cyril and Methodius University, e-mail: con@finki.ukim.mk , website: https://osc.ukim.edu.mk/ |