WP 4:
Open Science Curriculum Integration
Embedding Open Science in Formal and Non-formal Curriculum

Capacity Building Programme on Open Science: A Multilevel Approach

OPEN ASIA PROJECT, SLOVENIA

11 – 15 November 2024

UNIVERSITI MALAYA

UNIMAS
UNIVERSITI MALAYSIA SARAWAK

UMS
UNIVERSITI MALAYSIA SABAH

SVKM'S NMIMS
Deemed to be UNIVERSITY

THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

TIMELINE AND KEY ACTIVITIES

Nov.–Dec. 2024

Identifying course content

Jan.–Apr. 2025

Developing open science course

May–July 2025

Course accreditation

July–Aug. 2025

Course piloting implementation plan

Sep. 2025

Final report

Sep.2025-Apr. 2026

Course piloting and feedback

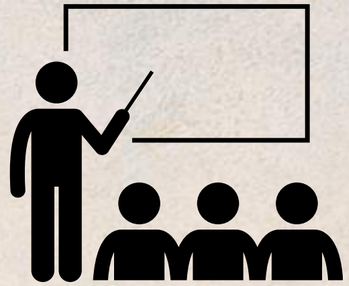
May-Jul. 2026

Evaluation and continuous improvement report

TYPES OF TRAINING & COURSES

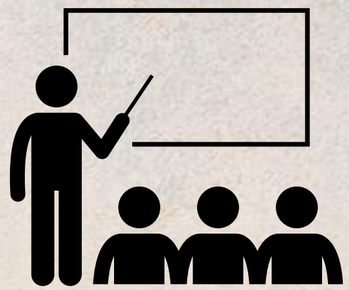
Formal	Informal
• Foundation Course: Introduction to Open Science	• Webinars and Seminars on Open Science Topics
• Data Management and Stewardship Workshop	• Panel Discussions with Open Science Experts
• Open Access Publishing Workshop	• “Open Science in Action” Workshop Series
• Advanced Course: Tools for Open Science	• Open Science Ambassadors / Warriors Programme

FORMAL TRAINING & COURSES



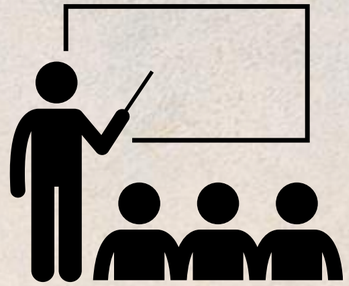
Course	CLO	Audience	Time	Level	Course Title
Foundation Course: Introduction to Open Science	• Define OS and understand its ethical, practical, and societal benefits • Identify OS practices, including open access publishing, data sharing, and transparency in research	• Early career researchers • PG students • Research admin • Librarians	1 credit (40 hrs)	• Macro • Meso • Micro	• OS: Principles & overview • Introduction to OS

FORMAL TRAINING & COURSES



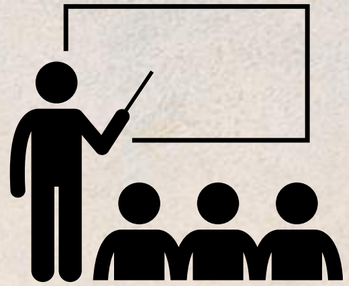
Course	CLO	Audience	Time	Level	Course Title
Data Management and Stewardship Workshop	• Apply RDM's best practices and the FAIR principles • Create effective DMPs and understand the role of data stewardship in OS	• Research data managers • Data stewards • Librarians • Researchers in data-intensive fields	1 credit (40 hrs)	• Macro • Meso • Micro	• Open data • RDM

FORMAL TRAINING & COURSES



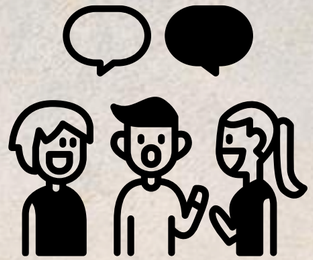
Course	CLO	Audience	Time	Level	Course Title
Open Access Publishing Workshop	• Understand OA models and recognize credible OA journals • Apply Creative Commons licenses for research outputs and avoid predatory publishing practices	• Researchers • Academic publishers • Journal editors • Librarians • Research admin	1 credit (40 hrs)	• Macro • Meso • Micro	• Open access • Open scientific knowledge: Scientific publication & research data • Open educational resources (OER)

FORMAL TRAINING & COURSES



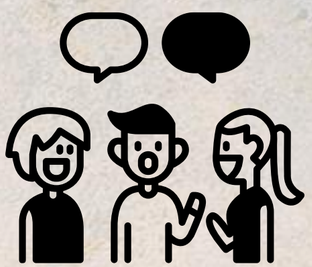
Course	CLO	Audience	Time	Level	Course Title
Advanced Course: Tools for Open Science	• Use Open Science tools such as the Open Science Framework, Zenodo, and GitHub • Employ preprint and open peer review practices, and use collaborative tools for reproducibility in research	• Advanced researchers • Postdoctoral fellows • Research software engineers • Digital librarians	1 credit (40 hrs)	• Macro • Meso • Micro	• Open research tools: software, source code. & hardware • OS infrastructures: virtual & physical repositories • ESA: crowdfunding & crowdsourcing • ESA: scientific volunteering & participatory science • Dialogue with other knowledge systems: indigenous, marginalized, & local communities

INFORMAL TRAINING & COURSES



Course	CLO	Audience	Time	Level	Course Title
Webinars and Seminars on Open Science Topics	Discuss OS trends and challenges, including its role in addressing global and local research needs	• Faculty, researchers • Postgraduate students • Policymakers	CPD Points	• Macro • Meso • Micro	• Embracing OS in research and teaching
Panel Discussions with Open Science Experts	Analyze OS challenges and opportunities across different research settings	• Institutional leaders • Policymakers • Senior researchers	CPD Points	• Macro • Meso • Micro	• Data Sharing and Transparency in Open Science

INFORMAL TRAINING & COURSES



Course	CLO	Audience	Time	Level	Course Title
"Open Science in Action" Workshop Series	Recognize practical applications of OS and learn from successful case studies	• Researchers • Research Support staff • OS advocates	CPD Points	• Macro • Meso • Micro	• Enhancing Research Impact and Accessibility
Open Science Ambassadors / Warriors Programme	Promote OS within institutions, build peer support networks, and mentor colleagues in Open Science practices	• Faculty members • Senior researchers • Librarians • Early career researchers	CPD Points	• Macro • Meso • Micro	• Open Science Advocacy: Training the Next Generation of Ambassadors

EVALUATION OF LEARNING OUTCOMES (FORMAL)

- Knowledge Assessments:
  - Pre and post course quizzes for each course
  - Workshops to measure understanding
- Practical Assignments Submissions:
  - Data management plans
  - Publication licensing exercises
  - Collaborative projects

EVALUATION OF LEARNING OUTCOMES (INFORMAL)

- Feedback and Reflection:
  - Participant surveys and reflection sessions for participants to share their insights and track their progress.

- Long term Tracking:
  - Monitoring participants' engagement in Open Science practices (e.g., data sharing, OA publishing) post programme to assess impact.

ACCREDITATION

Course type	Delivery method	Steps involved	Duration
Formal	• Micro-credential • Elective course	1. Getting approval of the developed OS courses from the Senate/ Academic Authority of the University 2. Submit notification of the approved OS courses to the respective accreditation agencies (e.g. MQA).	3 months
Non-Formal	Online	Not applicable.	Immediate

PILOT FEEDBACK PLAN

Course type	Evaluation	Promotional activities	Commencement date
Formal	Use the existing/ design a course feedback form that evaluate the course's content, delivery, assessment etc.	• Official announcement • Offering of the courses in every semester as elective	Semester of Sep. 2025
Informal	Participant surveys and reflection sessions for participants to share their insights	• Official announcement of course offerings • The inclusion of the courses into annual list of trainings • CDP points will be awarded	Immediate

FULL IMPLEMENTATION

May-Jun 2026

- Analysis of feedbacks received from the students/ participants

Jun-Jul 2026

- Refinement of the courses

Aug 2026

- Official implementation of the OS courses

Thank you!

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