The Faculty of 3mE

Research Data Management Policy

TUDelft

Preface

The Faculty of Mechanical, Maritime and Materials Engineering Research Data Management Policy[1] is part of the central TU Delft Research Data Framework Policy (which outlines the roles of the Library, ICT Department, University Services and the Executive Board at TU Delft).[2] This policy helps create effective practices for working with research data at the faculty, and defines data management roles and responsibilities of the different stakeholders within the Faculty from the 1st of January 2020 onwards. The policy was approved by the dean on 24 September 2019.

The principles outlined in this policy are elaborated in more detail, with supporting information available, in an online guidance on practical implementation.[3]

This policy is motivated by the belief that good data management leads to research that is more time- and cost-efficient as it prevents data loss and duplication of efforts and can contribute to the quality, reproducibility and impact of research. This policy is inspired by the FAIR principles[4]: research data should be Findable, Accessible, Interoperable and Reusable (FAIR) by archiving the data with proper documentation.

1] https://doi.org/10.5281/zenodo.3524106
2] https://doi.org/10.5281/zenodo.2573160
3] https://www.tudelft.nl/en/library/current-topics/research-data-management/
4] https://www.force11.org/group/fairgroup/fairprinciples

This policy cultivates:

- Best practice for ensuring that scientific arguments and results are reproducible in the long term.
- Better exposure of academic work of researchers at TU Delft leading to recognition of the quality of the research process as a whole.
- Responsible management of research data, including the secure storage of personal data (in accordance with the General Data Protection Regulation (GDPR)/Algemene verordening gegevensbescherming (AVG))[5] and the protection of intellectual property rights.
- Improved practices for meeting the demands of funders and publishers with respect to research data management and sharing.
- Long term preservation of the data underlying publications for future users within and outside the research group. This cannot be guaranteed by publishing the data in supplementary materials or by only making the data available upon request.

This policy recognises that:

- Individual departments and research groups have different working practices and processes and will therefore require dedicated guidelines.
- Research Data Management covers the entire process of managing research data from its creation to its re-use and preservation, which is not equal to Open Science. While it is beneficial to publish research data openly, there might be valid ethical, legal or commercial implications, which will make data unsuitable for open sharing.
- Research data refers to all data created in the course of research and includes source code, algorithms, simulations and models, experimental notes (paper or digital), physical samples, questionnaires, video and audio recordings, protocols, and other forms of information supporting traditional publication.

The key points of this policy are:
- All individuals involved in research follow the research data management strategy of their research group.
- All individuals involved in research attend data management training when needed.
- Research data and code needed to reproduce research findings are appropriately documented, stored and shared in a suitable repository.
- The minimal requirement is the deposition of the numerical data (processed data) underlying the figures and conclusions in academic papers and PhD theses.
- Data Stewards can assist researchers in these activities.

5] https://www.tudelft.nl/en/privacy/

Faculty Roles and Responsibilities

All individuals involved in research are responsible for:

- Ensuring that research data, code and any other materials needed to reproduce research findings are appropriately documented, stored and shared in a research data repository in accordance with the FAIR principles (Findable, Accessible, Interoperable and Reusable) for at least 10 years from the end of the research project, unless there are valid reasons not to do so.
    - The minimal requirement is the deposition of the numerical data (processed data)[6] underlying the figures in academic papers and PhD theses. Deposition of datasets not directly linked with publications or any other research outputs relevant for reproducibility (raw data/software, data processing scripts, (interview) protocols, designs, physical samples...) is encouraged. It is recommended to record the version of the software used and where possible store code together with the software used.
    - Should data not be made available in a repository, ensure that the data management plan and any research publications resulting from the project have a statement explaining what additional datasets/materials exists; why access is restricted; who can use the data and under what circumstances.

6] https://doi.org/10.5281/zenodo.2556949

- Appropriate management of confidential research data. Personal data should be managed in accordance with the General Data Protection Regulation (GDPR)/Algemene verordening gegevensbescherming (AVG).[7] Contractual agreements with third parties on confidentiality of data should be respected at all times.
- Understanding who owns research data resulting from their projects and what that implies in terms of data management, particularly sharing and publishing.
- Properly citing research data, in accordance with the FORCE11 Joint Declaration of Data Citation Principles.[8]
- Undertaking training in good data management, as required.

PhD students are responsible for:

- Developing a written data management plan (DMP) for managing research outputs within the first 12 months of the PhD study. (As part of the Go/No-Go meeting. For all PhDs starting from 1 January 2020 onwards.)
- Attending relevant training in data management, for which credits can be obtained through the Graduate School.
- Ensuring that all data and code underlying completed PhD theses are appropriately documented and accessible for at least 10 years from the end of the research project, in accordance with the FAIR principles (Findable, Accessible, Interoperable and Reusable), unless there are valid reasons which make research data unsuitable for sharing. (For all PhDs starting from 1 January 2019 onwards.)

Assistant/Associate/Full Professors are responsible for:

- Establishing a research data management strategy for their research group and ensuring that all members of the research group are aware of the FAIR data principles, are appropriately trained to effectively manage research data, are aware of data storage solutions at TU Delft and that members of the research group adhere to the expectations outlined within this policy.
- Ensuring that all members of the group plan for good data management from the outset of any research project and adhere to good data management practice throughout the project's lifecycle.
- Ensuring that where projects are funded by external parties, agreements made with those parties strive for compliance with this policy and determine maximal embargo periods. Research funded primarily by third parties will have to be evaluated on a case-by-case basis to ensure the best interests of all parties involved.
- Budgeting for the costs of research data management into financial project planning at the proposal stage.

7] https://www.tudelft.nl/en/privacy/
8] https://www.force11.org/datacitationprinciples

PhD Supervisors are responsible for:

- Supporting their PhD students in preparation of a written Data Management Plan (DMP) for managing research outputs within the first 12 months of the PhD study. (As part of the Go/No-Go meeting. For all PhDs starting from 1 January 2020 onwards.)
  - The PhD Supervisor is responsible for reviewing and approving the DMP and the Faculty Data Steward can be contacted for advice and support.
- Ensuring that PhD students attend relevant training on data management, for which credits can be obtained through the Graduate School.
- Ensuring that their PhD students make all data and code underlying their completed PhD theses appropriately documented and accessible for at least 10 years from the end of the research project, in accordance with the FAIR principles (Findable, Accessible, Interoperable and Reusable), unless there are valid reasons which make research data unsuitable for sharing. (For all PhDs starting from 1 January 2019 onwards.)

Data Stewards are responsible for:

- Facilitating the development, review and implementation of the faculty's data management policy.
- Creating awareness and explaining to researchers the added value of good data management.
- Assisting researchers in planning the collection, management, and publication of data in research projects and liaising with other service providers (such as Legal services, ICT, Human Research Ethics Committee) as required.
- Helping researchers with writing data management plans and with budgeting for research data management costs in their grant applications.
- Developing and running training events tailored to researchers' needs.
- Identifying researchers who already have good data management practices and encouraging them to become Data Champions[9] to establish local contact points of expertise.
- Advising researchers on regulations for working with personal research data (in coordination with the ICT Privacy Team[10] and Human Research Ethics Committee[11]).

9] https://www.tudelft.nl/en/library/current-topics/research-data-management/research-data-management/
data-stewardship/data-champions/
10] https://www.tudelft.nl/en/privacy/
11] https://www.tudelft.nl/over-tu-delft/strategie/strategiedocumenten-tu-delft/integriteitsbeleid/human-
research-ethics/

Heads of Departments are responsible for:

- Ensuring that Assistant/Associate/Full Professors have a research data management strategy in place, consistent with the Faculty Research Data Framework Policy.
- Monitoring and reviewing of data management practices in the department (e.g. R & O meetings).
- Discussing data management practices with members of the department and encouraging them to adhere to best practices.
- Supporting Data Stewards in identifying Data Champion candidates.

The Faculty Dean is responsible for:

- Ensuring that Data Stewards are embedded within faculties.
- The development of the Faculty Policy for Research Data Management.
- Ensuring that all individuals involved in research are compliant with this policy.
- Ensuring yearly evaluation of research data management progress at faculty level.

From the 3mE Mission Statement:
https://www.tudelft.nl/en/3me/mission-statement/

The staff of the faculty of 3mE carry out ground-breaking and pioneering research, which leads to challenging applications and new fundamental insights in the fields of mechanical, maritime and materials engineering. The foundations and results of this research are reflected in outstanding contemporary and modern education. This education inspires 3mE students to become socially engaged and responsible engineers and scientists, who make optimum use of their competencies and expertise in order to resolve social problems and develop valuable technological innovations.

The faculty of 3mE presents itself as a dynamic and innovative faculty aimed at having its staff, students and alumni make a significant contribution to the development and growth of a sustainable society, as well as prosperity and welfare.

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