

Good Scientific and Artistic Practice for the Master's programme

Quality Management, Evaluation & Reporting, Graz University of Technology

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Development and Use of the Teaching Materials:

These slide sets have been developed to provide an introduction to the fundamentals of good scientific and artistic practice at Graz University of Technology (TU Graz) as well as in inter-university degree programmes within the NAWI Graz framework. The current set of slides has been adapted for Master's programmes. Where identical content or the same visual material is used across different sets of slides, no reference is made to other sets of slides, but rather to the original source of the content or material used in each instance.

This applies equally to the English-language slide sets. These are, in principle, direct translations of the German-language versions and differ only in terms of the inclusion of, or references to, English-language information and source materials.

This teaching material will be piloted at TU Graz during the 2026/2027 academic year.

Licensing:

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Good Scientific and Artistic Practice (GSP) – Why Is This an Issue Today?



Every game has rules.
Master the rules,
win the game!

The standards of good scientific practice ensure integrity, quality, and social responsibility in all phases of research (ÖAWI, 2026). From the very beginning of one's studies, they provide guidance for academic work and everyday student life.

What Can You Expect?

- Part 1: Fundamentals of Good Scientific and Artistic Practice (GSP)
- Part 2: Examples of GSP in the Context of Academic Work
- Part 3: Understanding and Avoiding Academic Misconduct
- Part 4: Appendix
 - Further Information, Sources, Licensing, AI Use, Acknowledgements

Part 1:

Fundamentals of Good Scientific and Artistic Practice (GSP)

1.1 What Is GSP?

1.2 The Importance of GSP in
Research and Academic Studies

1.3 The Four Principles of Scientific
Integrity



AI GENERATED

Fig. 1: Magnifying Glass. Source: Own AI-generated figure, created by the author using the Academic AI Image Generator, 17.06.2026

1.1 What Is GSP?

(HS-QSG, 2024)

- Good Scientific and Artistic Practice:
 - Covers norms and standards for scientific work
 - Rules that support researchers and research institutions in addressing various challenges in the context of their work
- Inclusion of the principle of good scientific and artistic practice in the Higher Education Quality Assurance Act (HS-QSG, 2024, Section 2a):
 - To standardize quality standards for all Austrian higher education institutions
 - Research focused on the acquisition of knowledge or the generation of knowledge
 - Research focused on expression, interpretation, or the use of creative processes

1.2 The Importance of GSP for Research and Academic Study (1/2)

(BMBWF, 2019; ÖAWI, 2015; ÖAWI, 2026)

“The quality of research is a precious asset for every society.”

(ÖAWI, 2015, p. 3)

- Quality in research ensures that ...
 - the public can have confidence in scientific findings.
 - innovations can be built on reliably documented findings.
 - a high standard is set in education (= a guarantee of the quality of your education!)
 - your paper/thesis is credible.

1.2 The Importance of GSP for Research and Academic Study (2/2)

- Following the GSP guidelines will support you in your studies (among other things) with regard to:
 - thorough source research
 - correct citation
 - correct documentation
 - identifying plagiarism
 - knowing how you are permitted to use Artificial Intelligence (AI)
 - and thus, in writing your own independent academic thesis!

1.3 The Four Principles of Scientific Integrity (1/7)

(ALLEA, 2023, p. 5)

- Adherence to the four principles essentially ensures compliance with GSP:

Reliability

Ensuring Quality of Research

Honesty

Communicating research in a transparent, fair, comprehensive, and unbiased manner

Respect

toward colleagues, research participants, test subjects, and society

Accountability

Responsibility for one's own research, from the initial idea to publication

1.3 The Four Principles of Scientific Integrity (2/7)

(ALLEA, 2023; Wrexham University, n.d.)

- Reliability:

By working carefully and accurately, you will acquire the skills that will be required of you throughout your studies and in your professional life. By taking a methodical approach and adhering to recognized standards, you will be able to produce compelling, high-quality results.

- Honesty:

By refraining from gaining any unfair advantages and instead working transparently and honestly, you strengthen your own credibility.

1.3 The Four Principles of Scientific Integrity (3/7)

(ALLEA, 2023; Wrexham University, n.d.)

- Respect:

By showing respect for the work of other researchers and citing your sources or acknowledging your colleagues, you avoid research misconduct and ensure that your work is transparent.

- Accountability:

You know what you have accomplished in your seminar paper or thesis. By presenting your work steps in writing or orally, you can credibly defend your approach—for example, during exams.

1.3 The Four Principles of Scientific Integrity (4/7)

- Scientific integrity is (Wissenschaftsrat [German Science Council], 2015; ÖAWI, 2026):
 - A commitment to conducting research with diligence, honesty, respect, and responsibility
- GSP stands for (ALLEA, 2023):
 - Adherence to rules to ensure that research is reliable, honest, respectful, and responsible



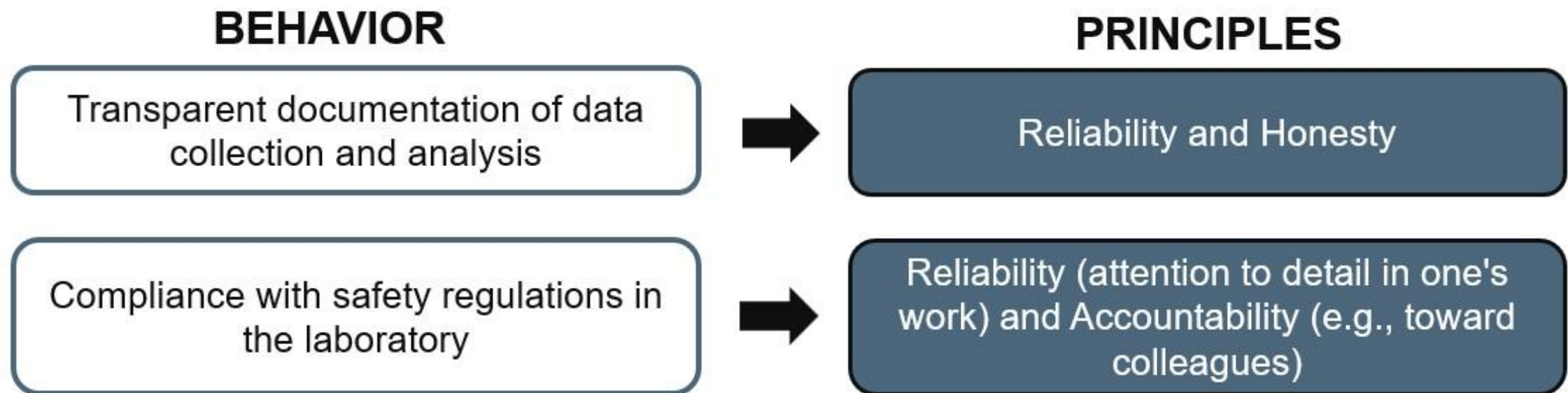
1.3 The Four Principles of Scientific Integrity (5/7)

(ALLEA, 2023, p. 5)

- Below are some examples of compliance with GSP. Can you match the examples to the principles of scientific integrity?
 - Transparent documentation of data collection and analysis
 - Compliance with laboratory safety regulations
 - Citation of all sources used in a text
 - Storage of research data in accordance with statutory retention periods

1.3 The Four Principles of Scientific Integrity (6/7)

- The examples can be categorized according to the principles of academic integrity as follows:



1.3 The Four Principles of Scientific Integrity (7/7)

- The examples can be categorized according to the principles of academic integrity as follows:

BEHAVIOR

Citation of all sources used in a text



PRINCIPLES

Honesty and Respect (recognizing the achievements of others)

Storage of research data in accordance with statutory retention periods



Reliability and Accountability

Part 2:

Examples of GSP in the Context of Scholarly Work: Explanation Based on the Four Principles of Scientific Integrity

2.1 Reliability

2.2 Honesty

2.3 Resect

2.4 Accountability

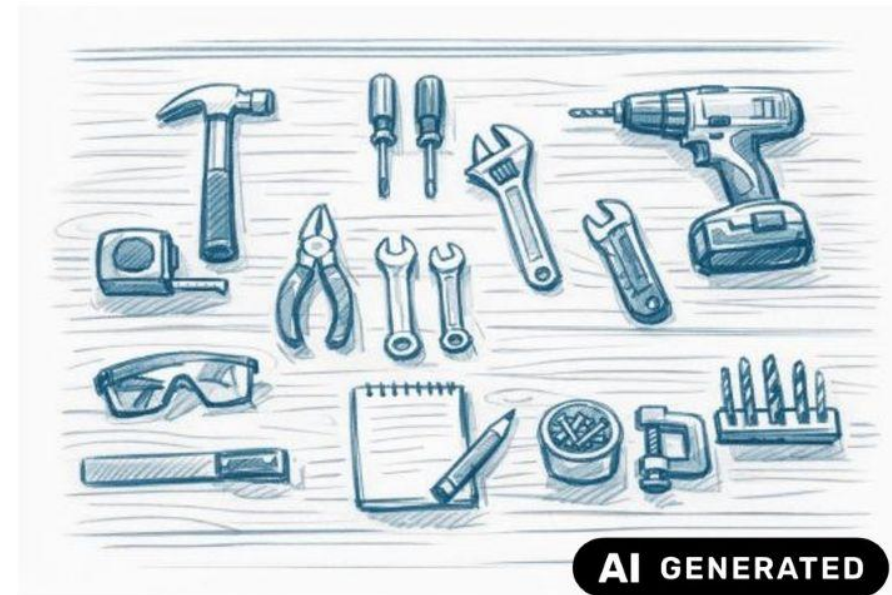


Fig 2: Work Desk. Source: Own AI-generated figure, created by the author using the Academic AI Image Generator, 25.06.2026

2.1 Reliability: Working with Sources (1/3)

- Sources are:
 - All the information referred to in a paper or text
 - E.g., scholarly literature, interviews, vlogs, plans, material samples
- Based on the sources, the following steps are carried out:
 - Scientific statements are substantiated and contextualized
 - Scientific statements that are transparent and verifiable
 - Academic papers are assessed

2.1 Reliability: Working with Sources (2/3)

(ÖAWI, 2015; Pears and Shields, 2022)

- Sources must be cited in order to:
 - distinguish between one's own contributions and ideas and those of others
 - clearly acknowledge the authorship of others and respect their scholarly contributions
 - demonstrate thorough research and familiarity with standard works in a discipline
 - enable readers to conduct their own research and reflect on the sources

2.1 Reliability: Working with Sources (3/3)

(ÖAWI, 2015; Pears and Shields, 2022)

- A good source meets scientific credibility standards, i.e.:
 - The author is known
 - Objective reasoning, no personal opinions
 - Accurate presentation of theories and facts, proper citations
 - Correct and transparent use of methods
 - Peer-reviewed (evaluation by independent experts)
 - Relevance to the academic community
 - Published by a scientifically recognized publisher

2.1 Reliability: Example of Working with Sources (1/5)

- Which of the sources listed below are suitable for your seminar paper, bachelor's or master's thesis? Which ones should you avoid?
 - Think about an answer for each source. Recommendations follow on the next slides!

Journal „Advanced
Composites and Hybrid
Materials“

Seminar papers,
Bachelor's theses and
Master's theses

Online encyclopedias

2.1 Reliability: Example of Working with Sources (2/5)

(Pears and Shields; Veith, 2022)

- Which sources are suitable for seminar papers, bachelor's theses or master's theses?
 - Journal „Advanced Composites and Hybrid Materials”
 - Reputable publisher
 - Peer-reviewed information
 - Journal with a good reputation within the research community
- Reputable source, suitable for citation!

... and available for you to download free of charge via the TU/University of Graz Libraries ;-)

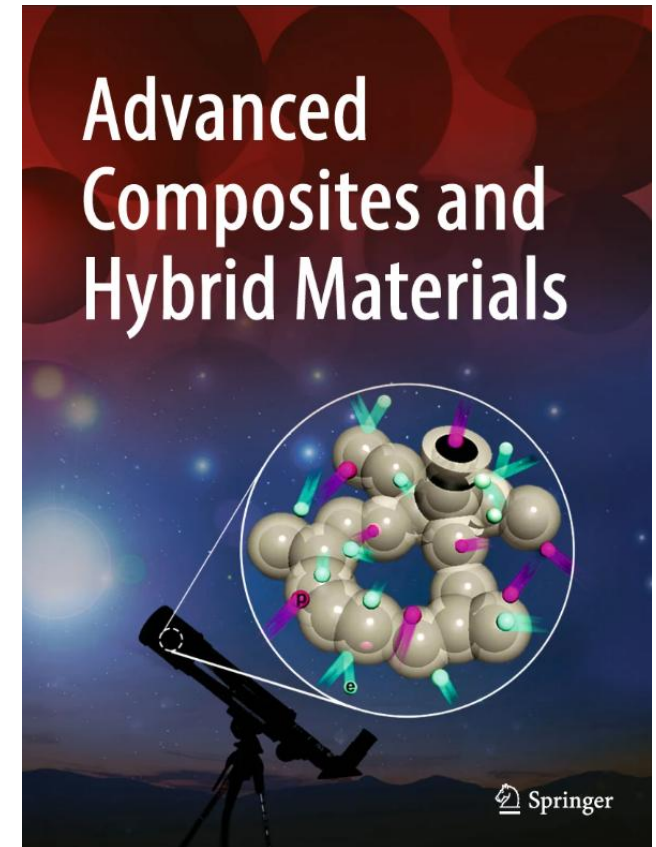


Fig. 3: Cover: @Springer Publishers, journal *Advanced Composites and Hybrid Materials* (2026). Used as a quotation in accordance with Section 42f of the German Copyright Act (UrhG); not licensed under CC BY 4.0.

2.1 Reliability: Example of Working with Sources (3/5)

(Sandberg, 2012; Veith, 2022)

- Which of the sources listed below are suitable for your seminar paper, bachelor's or master's thesis?
 - Seminar papers, Bachelor's theses and Master's theses
 - Avoid citing seminar papers in your seminar papers or final theses
 - Cite Bachelor's and Master's theses only in exceptional cases (e.g., original source, very specific research questions, no academic article on the topic available to date)
 - Online encyclopedias
 - Check the level of acceptance within the research community
 - Wikipedia is not suitable for academic evidence

2.1 Reliability: Example of Working with Sources (4/5)

(Elmore and Weston, 2020)

- Why is it important to check the quality of a source?
 - Among other reasons, because of the rise in predatory journals!
- Business models of predatory journals/publishers:
 - Revenue from fees for rapid, inadequately reviewed publications
 - Appropriation of other people's research findings (Vandeveld, 2025)
- Damage to research caused by predatory journals/publishers:
 - Incorrect findings are disseminated (usually no peer review, no possibility of retracting flawed articles)
 - leads to distorted findings and a loss of trust in research

2.1 Reliability: Example of Working with Sources (5/5)

(Elmore and Weston, 2020)

- Consequences for researchers:
 - Journals that are not listed are overlooked by reputable databases, thus valuable findings are not discovered or cited
 - If journals end up on 'blacklists', their publications lose their value
 - The appropriation of research findings by others diminishes the value of one's own findings (doubts regarding origin, traceability and credibility)
- Protection against predatory journals:
 - Check the quality of editors, journals and publishers
 - Be aware of warning signs, e.g., promises of (unrealistically) rapid publication
 - Use blacklists (e.g., beallist.net)
 - Follow checklists for identifying predatory journals (e.g., thinkchecksubmit.org)

2.1 Reliability: Proper Citation (1/4)

(Pears and Shields, 2022; Veith, 2022)

- All sources used in the preparation of a paper must be cited correctly
 - The following must be cited:
 - All content (theories, ideas, research findings, etc.) that does not originate from you!
 - The following do not need to be cited:
 - General knowledge
 - Knowledge that is common knowledge within the relevant research community
 - As a rule: If in doubt, always cite the source!

2.1 Reliability: Proper Citation (2/4)

(Pears and Shields, 2022; Veith, 2022)

- As a general rule:
 - Cite all sources you use, including tables, translations, and figures (be sure to check the license!)
 - Follow the specified citation style and use only one citation style within a single paper or document (be consistent!)
 - The language used in the main text determines the language of the citation (e.g., *Pears and Shields* vs. *Pears und Shields*)!

Incomplete or incorrect
source citations may give
the impression of intentional
concealment or a lack of
reliability!

2.1 Reliability: Proper Citation (3/4)

- Citation styles (citation guidelines) specify how different types of sources should be referenced in the body of the text and in the bibliography (Veith, 2022)
 - (Literature-)Sources contain several components (Pears and Shields, 2022):
 - Authors, title, year of publication, editors, online availability, etc.
 - Depending on the source (and citation guidelines!), these components are ordered or emphasized differently
 - Advantages:
 - Quick identification of the type of source, which determines the subsequent search strategy
 - Relevance to one's own work or the source's credibility can be assessed

2.1 Reliability: Proper Citation (4/4)

- Common citation styles in the fields of engineering and the natural sciences include:
 - IEEE (Institute of Electrical and Electronics Engineers)
 - Harvard referencing style
 - Chicago
 - Vancouver
 - APA (American Psychological Association)
 - MLA (Modern Language Association)
 - DIN ISO 690



Many institutes
already have detailed
guidelines for writing
seminar papers
and theses!

2.1 Reliability: Examples for different citation styles

- Harvard citation style:
 - In the main text, e.g.: “Predatory journals misrepresent their editorial board (Elmore and Weston, 2020).”
 - In the reference list (in alphabetical order):
Elmore, S.A. and Weston, E.H. (2020) ‘Predatory Journals: What They Are and How to Avoid Them’, *Toxicologic Pathology*, 48(4), pp. 607–610. doi:10.1177/0192623320920209.
- Citation according to IEEE:
 - In the main text, a number is assigned to the source (in the order in which it is cited), e.g.: “... their editorial board [1].”
 - In the reference list: (listed by number)
[1] S. A. Elmore and E. H. Weston, “Predatory Journals: What They Are and How to Avoid Them,” *Toxicologic Pathology*, vol. 48, no. 4, pp. 607–610, 2020, doi:10.1177/0192623320920209.
- Citation according to Chicago Notes:
 - In the main text, e.g.: “Predatory journals misrepresent their editorial board¹.”
 - In the footnotes, e.g.: 1) Susan A. Elmore and Elizabeth H. Weston, “Predatory Journals: What They Are and How to Avoid Them,” *Toxicologic Pathology* 48, no. 4 (2020): 607–610, [https://doi.org/...](https://doi.org/10.1177/0192623320920209)
 - In the reference list: (alphabetical order)
Elmore, Susan A., und Elizabeth H. Weston. “Predatory Journals: What They Are and How to Avoid Them.” *Toxicologic Pathology* 48, Nr. 4 (2020): 607–610. <https://doi.org/10.1177/0192623320920209>

2.1 Reliability: Online Sources

- Date of Access for online sources:
 - Online articles with a DOI do not require a date of access (the Digital Object Identifier does not change)
 - Online sources that may change usually require an exact date of access (document your access to a URL!)
- Example of an online video (YouTube):
 - Styria – Ambassadors with Heart (2024) *Johanna Pirker: Forbes “30 Under 30” and the Creative World of Computer Science*. June 12. Available at: <https://www.youtube.com/watch?v=b6mPJl2fLsc>. (Accessed on: June 1, 2026)
- Example of a patent (from Pears and Shields, 2022, pp. 87–88):
 - Padley, S. (2015) *Radiator isolating valve*, UK Intellectual Property Office Patent No. GB2463069. Available at: <https://wordwide.espacenet.com/> (Accessed: May 24, 2021).

2.2 Honesty: Transparent Disclosure of the use of AI (1/2)

(TU Graz, 2023a; 2023b, University of Graz, 2023a)

- There are clear guidelines on the use of AI:
 - Graz University of Technology: Guidelines for the Use of AI-Supported Tools in Teaching
 - University of Graz: Framework for Dealing with AI Systems
- Common Basic Principles:
 - The use of AI is generally permitted, but:
 - always within the framework of good scientific practice
 - in compliance with laws (copyright, data protection) and UNESCO recommendations

2.2 Honesty: Transparent Disclosure of AI Use (2/2)

(TU Graz, 2023a; 2023b, University of Graz, 2023a)

- Instructors determine how AI may be used in their course:
 - Rules must be communicated in advance in the course description
 - Student Responsibilities:
 - Students remain responsible for the content of their work
 - AI use must be disclosed/identified (mandatory labeling, declaration of originality)
- Please note that AI...
 - is not a reliable search engine for sources or literature.
 - does not reliably recognize different citation methods.
 - sometimes collects data about you even without your consent.
 - will always provide an answer, even if it is a hallucination.

2.2 Honesty: Avoid Plagiarism (1/4)

(TU Graz, 2025a; University of Graz, 2023b)

- Plagiarism is:
 - “the complete or partial adoption of texts, content, ideas or artistic works, which are then presented as one’s own” (TU Graz, 2025a, p. 7) (transl. by Author)
- Plagiarism (TU Graz, 2025a; University of Graz, 2023b) ...
 - constitutes academic misconduct
 - has consequences under academic regulations
 - is fraud with a view to gaining an unfair advantage

2.2 Honesty: Avoid Plagiarism (2/4)

- Plagiarism occurs when sources, for example ... (TU Graz, 2025a; University of Graz, 2023b)
 - are missing
 - are incorrect, fabricated (or imagined)
 - do not clearly correspond to the text passage
- Plagiarism can be avoided by (Pears and Shields, 2022):
 - Citing all sources used (and thoroughly researched)
 - Documenting sources used (possibly using a reference management program)
 - Paraphrasing content correctly instead of copying it

2.2 Honesty: Avoid Plagiarism (3/4)

(Pears and Shields, 2022)

- Paraphrasing :
 - Is a fundamental component of academic writing
 - The content, theories, and findings of others are restated or summarized in one's own words
 - The source is cited!

If I write something differently, do I have to cite it?

If you use other people's ideas or insights in a modified form without giving credit (citing), that's plagiarism!

2.2 Honesty: Avoid Plagiarism (4/4)

- Plagiarism Check (or Similarity Check):
 - Check using software
 - Comparison for text similarities/text matches
- Similarity Check at TU Graz and University of Graz (HTU TU Graz, 2023; TU Graz, 2025b; ÖH Uni Graz 2026):
 - Mandatory for Master's theses
 - Students may request a free Similarity Check for their work
 - TU Graz: three times per semester (HTU TU Graz, 2023)
 - University of Graz: free Similarity Check for up to 200 pages/year

2.3 Respect: Intellectual property of others (1/2)

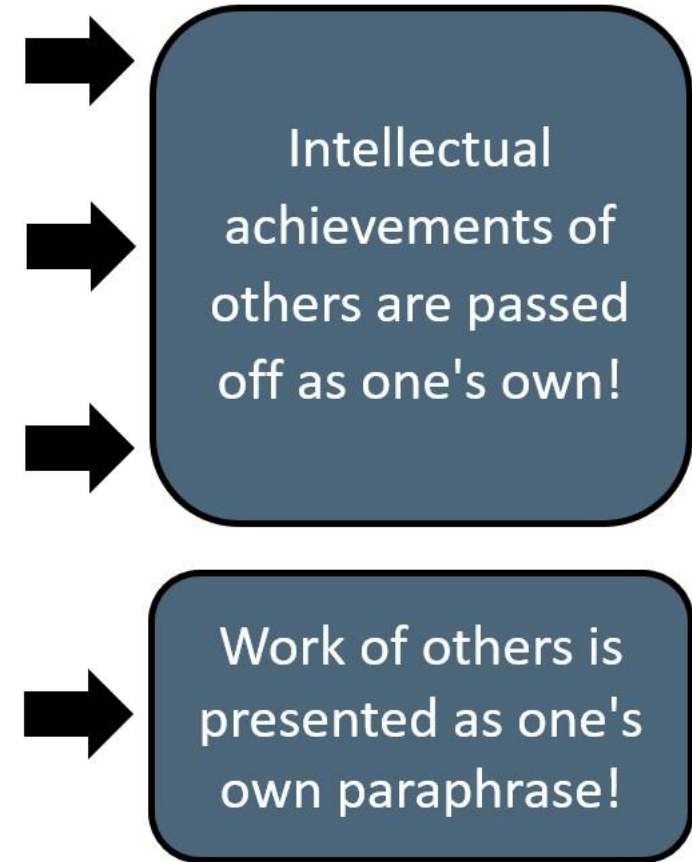
- Plagiarism also includes:
 - Theft of intellectual property
 - Copyright infringement
 - A sign of a lack of respect for the work of others



Fig. 4: Illustration Similarity Check. Source: VroniPlag

2.3 Respect: Intellectual property of others (2/2)

- Different types of plagiarism (Hagenström, 2022), for example:
 - Verbatim plagiarism:
 - Copying entire sentences from a source without clearly attributing them (missing or unclear citation) to a specific passage in the text.
 - Disguised plagiarism:
 - Text is rephrased without citing the source.
 - Translation plagiarism:
 - A text in a foreign language is translated and reproduced without citing the source.
 - Sacrificial Pawn:
 - Direct reproduction of text, including the source, but without quotation marks (this suggests that the text is an indirect quote or a paraphrase)



2.2 Respect: Avoid Plagiarism – Example for Paraphrasing

Original Text [ÖAWI, 2015, p. 5]

All persons involved in research are to observe the Standards of Good Scientific Practice applicable to their respective fields, to investigate and settle any doubts as to the applicable standards, to avoid research misconduct and to immediately remedy any misconduct detected.

Paraphrase 1 – Plagiarism

It is important to understand that all persons involved in research are to observe the Standards of Good Scientific Practice applicable to their respective fields, to investigate and settle any doubts as to the applicable standards, to avoid research misconduct and to immediately remedy any misconduct detected (ÖAWI, 2015).

Paraphrase 2 – Indirect Quote (no plagiarism)

It is important to understand that "all persons involved in research are to observe the Standards of Good Scientific Practice applicable to their respective fields, to investigate and settle any doubts as to the applicable standards, to avoid research misconduct and to immediately remedy any misconduct detected" (ÖAWI, 2015, p.15).

2.3 Respect for Colleagues and Researchers and their Work

- Fair Citation of Others' Work (BMBWF, 2020; ÖAWI, 2026; TU Graz, 2025a, University of Graz, 2023b):
 - Cite all publications/sources that supported your work
 - Cite all individuals who made a substantive contribution to a research project (This also applies to group projects during your studies)
 - Individuals who did not make a direct contribution may be mentioned in an acknowledgment
- Respect in collaboration (ALLEA, 2023):
 - Collegiality, e.g., fair distribution of work packages in group projects (during your studies) or in collaborative efforts

2.3 Respect for Colleagues and Researchers and their Work

(ALLEA, 2023)

- Scientific work also means treating all people, living beings, and areas affected by research with respect.
 - This consideration in one's own scientific research practice ensures, e.g., that:
 - Participants who provide information and data are protected
 - Research objects (e.g., materials, samples, artifacts) are handled with care
 - Cultural heritage is not damaged by improper practices
 - Unnecessary environmental impacts resulting from experiments are avoided
 - Gender sensitivity and diversity are considered

2.4 Accountability: Responsibility in Your Studies (1/2)

(ALLEA, 2023)

- Personal Responsibility for Academic Progress and Success:
 - Take the initiative to familiarize yourself with
 - Course requirements
 - Criteria for performance evaluation
 - Existing guidelines for writing (thesis) papers



Read your
institute's
guidelines!

2.4 Accountability: Responsibility in Your Studies (2/2)

(ALLEA, 2023)

- Personal Responsibility for your work from the initial idea through to publication:
 - Responsibility for carrying out the work (including supervised work)
 - Responsibility for the Quality of sources
 - Storage and retention of research data
 - Transparent documentation of your work steps



Make sure to
plan your time well
so that you aren't even
tempted to use
unauthorized aids!

2.4 Accountability in Research Projects (1/2)

- Responsibility for research participants
 - Participation must be voluntary: “Informed consent”
 - Full disclosure of the background and purpose of the study, including any deception (at the latest during the debriefing)
 - Withdrawal is possible at any time (without giving reasons and/or facing consequences)
 - Respect for human dignity
 - No discrimination! No danger, no harm, and a commitment to minimizing risk!
 - Protection of (vulnerable) individuals/groups who cannot give consent on their own
 - The universities’ Ethics Committees assess relevant ethical aspects of research

2.4 Accountability in Research Projects (2/2)

(Kurzmann and Plaschke, 2023; WMA, 2024)

- Responsibility for research participants involved in research projects
 - Protection of personal data and confidentiality, for example through:
 - Pseudonymization (allowing participants to be linked to data) or complete anonymization (preventing participants from being linked to data) of the data
 - Separate storage of research data and participant data
 - Access rights, encrypted storage
 - Training of staff regarding data protection and ethical standards
 - Ethics committees assess the ethical acceptability

Part 3:

Violations of the GSP and Prevention of Scientific Misconduct

- 3.1 Definition of Research Misconduct
- 3.2 Questionable Research Practices
- 3.3 Research Misconduct: An Example
- 3.4 Avoiding Academic Misconduct

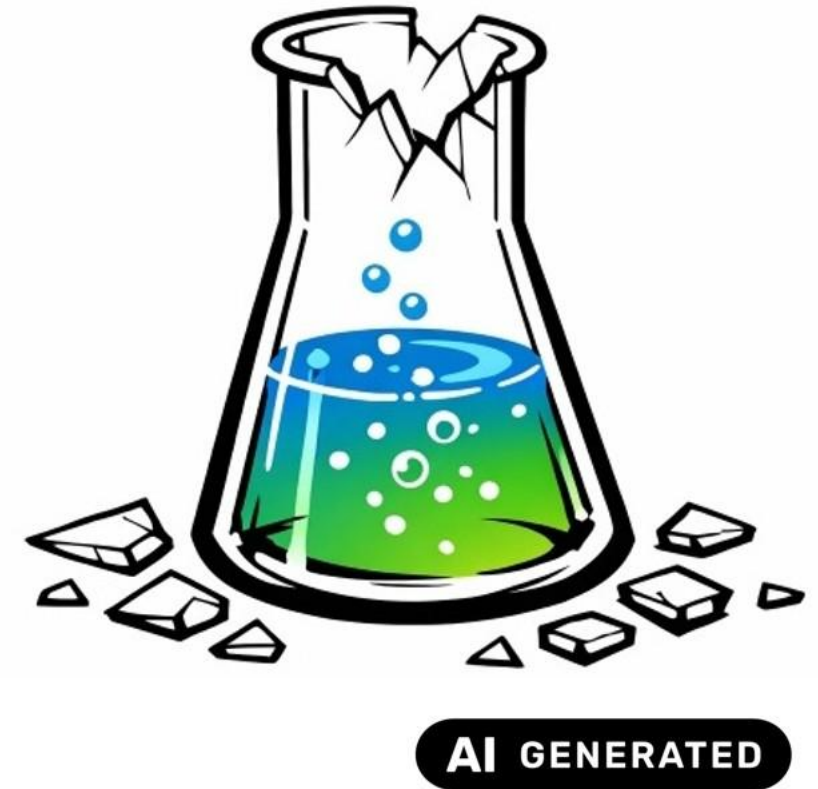


Fig. 5: Laboratory Glass. Source: Own AI-generated figure, created by the author using the Academic AI Image Generator 25.06.2026

3.1 Definition of Research Misconduct

- Violation of the GSP (BMBWF, 2020)
 - Generally, anything that does not comply with the GWP
- Scientific misconduct HS-QSG, 2024; TU Graz, 2025a; University of Graz, 2023b):
 - Applies when there is an intentional or grossly negligent violation of the GSP
 - Intentional: A violation of GSP standards is at least considered possible and accepted
 - Grossly negligent: A violation of GSP standards resulting from a failure to exercise due care and a failure to recognize that this constitutes a violation of the GSP standards

Both can have significant consequences, depending on the severity of the violation or misconduct!

3.2 Questionable Research Practices (1/3)

(ENAI, 2019; ÖAWI, 2026)

- Behaviors that constitute a violation of the GSP, e.g.:
 - Distortion of results (e.g., by concealing conflicts of interest or omitting important limitations in a study)
 - Selective citation of certain works to please editors or reviewers
 - Inclusion of individuals as authors who do not meet the recognized criteria for scientific authorship (e.g., as a favor or solely for proofreading or editing work)

3.2 Questionable Research Practices (2/3)

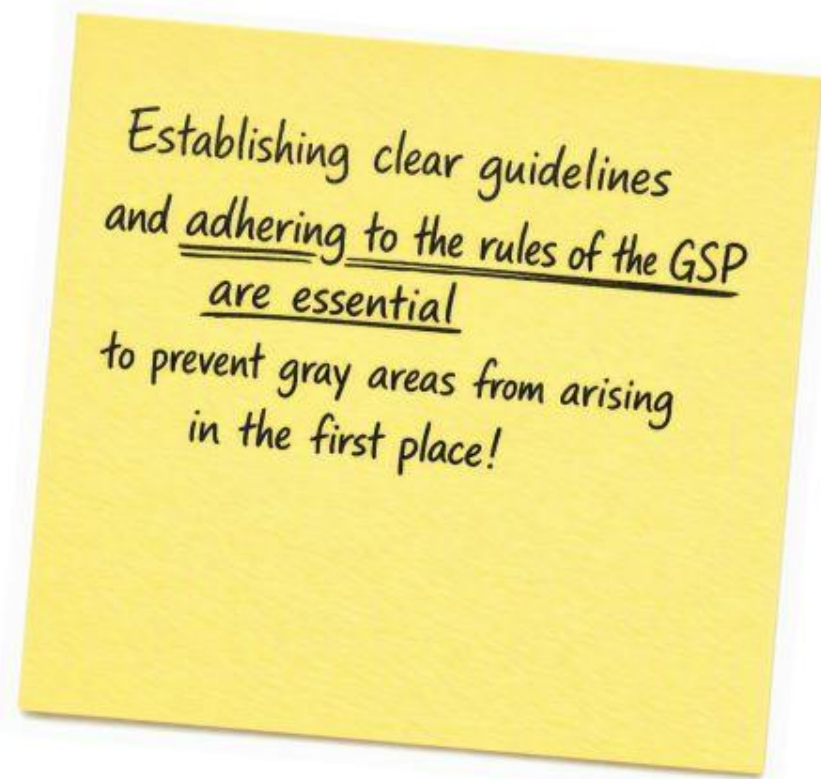
- Side Note on Authorship:

“Authorship is based on (1) significant, scientifically relevant contributions to the design of a research project, data collection and analysis, and/or interpretation, and (2) significant contributions to the drafting of the text. In addition, authors must (3) approve the final version and thereby assume (4) responsibility for the content of the publication (unless—based on a statement by the authors—this responsibility is divided among the co-authors for different sections)” (ÖAWI, 2026, p. 7, transl. by Author).

3.2 Questionable Research Practices (3/3)

(BMBWF, 2020; ENAI, 2019; ÖAWI, 2026)

- Questionable research practices often do not constitute a direct violation, but they are problematic:
 - Hinder the establishment of GSP standards
 - Incorrect work practices are increasingly viewed as “normal”
 - Gray areas arise
 - Distort results
 - Erode trust in science



Establishing clear guidelines
and adhering to the rules of the GSP
are essential
to prevent gray areas from arising
in the first place!

3.3 Research Misconduct: An Example and Its Consequences (1/2)

- Compare the two paragraphs below – paraphrase or plagiarism? (Example transl. by Author)

- Original text from 2002:

The call for a clearer division of responsibilities between the EU and member states or regions is central to all considerations. A catalog of competences—alongside the Charter of Fundamental Rights—“currently represents the concrete expression of the constitutional idea”²⁶⁶.

[Note: Footnote 266 in the original: Felder/Grunow: “As in ...,” 2001, op. cit., p. 52.].

- Excerpt from a 2006 dissertation:

The call for a clearer division of responsibilities between the European Union and member states or regions has been, and remains to this day, central to numerous discussions. For many, a catalog of competences—alongside the Charter of Fundamental Rights—represented the concrete embodiment of the constitutional idea.

[Note: no footnote, no reference to sources used]

3.3 Research Misconduct: An Example and Its Consequences (2/2)

- Original text (Volkmann-Schluck, 2002) (all transl. by Author)

The call for a clearer division of responsibilities between the EU and member states or regions is central to all considerations. A catalog of competences—alongside the Charter of Fundamental Rights—“currently represents the concrete expression of the constitutional idea”²⁶⁶.

- Excerpt from the 2006 dissertation of K.-T. zu Guttenberg:

The call for a clearer division of responsibilities between the European Union and member states or regions has been, and remains to this day, central to numerous discussions. For many, a catalog of competences—alongside the Charter of Fundamental Rights—represented the concrete embodiment of the constitutional idea.

- Revocation of K.-T. zu Guttenberg’s 2011 dissertation due to the nature (deception) and extent of the plagiarism
 - Finding of copyright infringements relevant under criminal law!
- Trigger for increased scrutiny of theses by prominent individuals, especially politicians!

3.4 Avoiding Academic Misconduct: Consequences

(TU Graz, 2025a; University of Graz, 2023c)

- Consequences depend on:
 - The severity of the misconduct
 - The type of work (written exam, thesis, etc.) in which the misconduct occurred
 - You will always lose time and forfeit your personal credibility and integrity!
- Examples:
 - Misconduct during examinations may result in a negative or invalid mark, loss of the right to sit the examination and/or referral to the Dean of Studies
 - Serious misconduct (e.g. plagiarism): a negative mark for the work, up to and including exclusion from the degree programme for two semesters
 - Revocation of the academic degree if misconduct is established after graduation

3.4 Avoiding Academic Misconduct (1/3)

(BMBWF, 2020; Pears and Shields, 2022; TU Graz, 2025a; University of Graz, 2023c)

- Preventing scientific misconduct involves both individual and institutional measures, e.g.:
 - Fabrication or falsification of data:
 - Peer review by a team or by individuals familiar with the subject matter
 - Comprehensive documentation of all steps
 - Plagiarism:
 - Compliance with citation guidelines
 - Clear distinction between one's own ideas, assumptions, and findings and those of others
 - Unjustified denial of access to original data or its premature deletion
 - Compliance with legal retention and deletion periods, data management plans
 - GSP standards: 10-year retention period for research data

3.4 Avoiding Academic Misconduct (2/3)

(BMBWF, 2020; ENAI, 2019; TU Graz, 2025a; University of Graz, 2023c)

- Some forms of research misconduct may be prevented at the institutional level through clear rules:
 - Obstructing the academic careers of others, particularly early-career researchers
 - Neglecting supervisory responsibilities
 - Obstructing or sabotaging the research of others
 - Aiding and abetting others' violations or actively participating in others' violations of the GSP
 - Transparency in communication regarding the institute's resources and timelines
 - Transparent criteria for authorship
- Providing false information in grant applications
 - Dual-review process during submission

3.4 Avoiding Academic Misconduct (3/3)

(Spark at York University, 2013)

- Before submitting a written assignment, ask yourself...

1. Have you written your paper in your own words?
2. Have you read and understood all the sources used in your paper?
3. Have you clearly and correctly cited all the information and sources used, and have you used them appropriately?
4. When incorporating your own previous work (e.g., from other courses), have you also cited yourself?
5. Have you saved previous versions of the paper to be able to prove that it is your own work?

Cargo-Cult Science Speech

(Feynman, 1974)

- Message from Richard Feynman:
 - Self-deception as a threat to scientific integrity and the quality of research
 - Prevention through personal responsibility:
 - Hold yourself to the highest standards
 - Be honest with yourself
 - Critically reflect on your own hypotheses and results
 - Actively search for errors or the causes of results

→ *Stay curious, (self-)critical, and fair! ;-)*

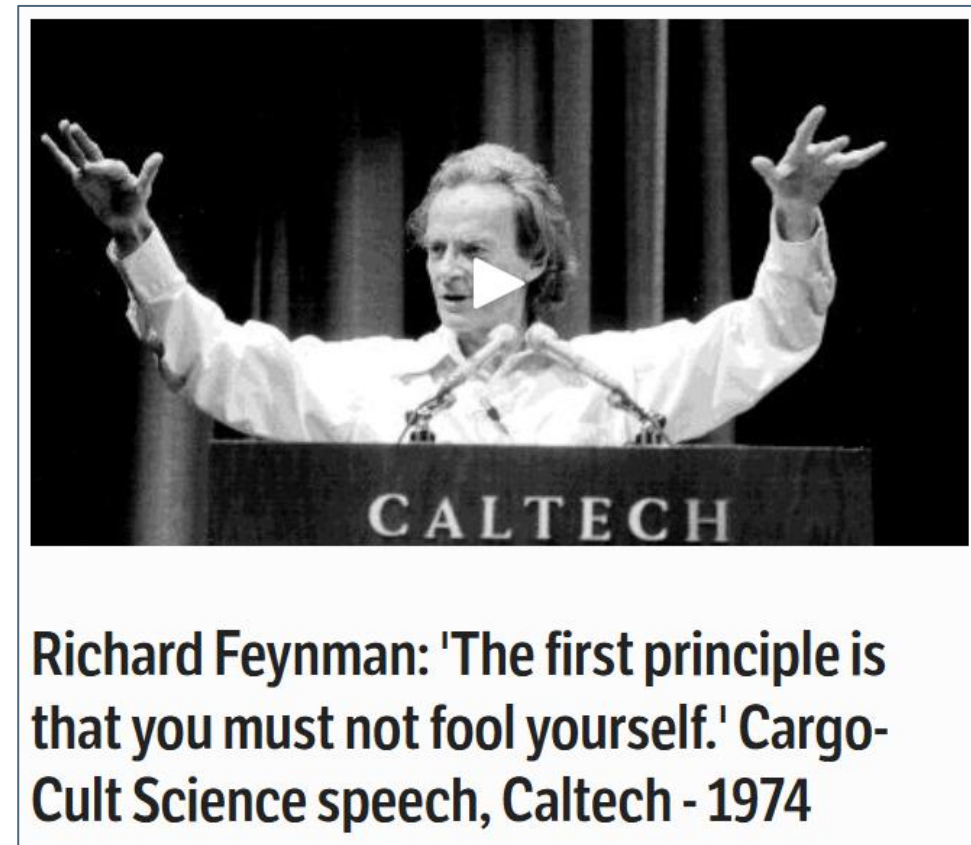


Abb. 8: Screenshot. Speakola Richard Feynman.

Part 4: Appendix (1/15)

- 4.1 Further Information for Students:
 - University Regulations
 - Bylaws of Satzungsteil Wissenschaftliche und Künstlerische Integrität – 12/2025 and Uni Graz
 - AI Guide for Researchers at TU Graz and Uni Graz
 - Guideline for the use of Artificial Intelligence (AI)-supported tools in the field of teaching
 - Graduation Support TU Graz and Uni Graz
 - Plagiarism Check of HTU Graz and ÖH Uni Graz
 - Ethics Compass of TU Graz

Part 4: Appendix (2/15)

- 4.1 Further Information for Students:
 - Services of Library and Archives
 - Library services of TU Graz and Uni Graz
 - Relevant Events of the university libraries TU Graz and Uni Graz
 - Search Portals TU Graz and Uni Graz
 - Overview Reference Management TU Graz and Uni Graz
 - Languages, Key Competencies and In-House Training
 - Key Competencies for Students
 - Support-Webseite an der Uni Graz
 - Point of contact for reporting suspected research misconduct: Commission for Scientific Integrity (CSI) TU Graz and Commission for Academic Integrity Uni Graz

Part 4: Appendix (3/15)

- 4.1 Further Information for Students:
 - Research Data Management (RDM)
 - Guidelines on Safeguarding Good Scientific Practice (GSP)
 - § 5 – Preservation of research data
 - Work in accordance with legal regulations & ethical standards
 - Clear & traceable documentation
 - Subject results to critical review
 - Public nature of basic research
 - Want to know more?
 - Contact Data Stewards: <https://rdm.tugraz.at>, rdmteam@tugraz.at or ub.fdm@uni-graz.at

Part 4: Appendix (4/15)

- 4.1 Further Information for Students:
 - Research Data Management (RDM) & FAIR Principles of TU Graz and Uni Graz
 - TU Graz RDM Services
 - <https://rdm.tugraz.at/dashboard> Inhouse Training – Course Offer
 - Uni Graz RDM-Service
 - Secure Data Storage
 - TU Graz Cloud and Uni Graz Cloud
 - FTP Storage and File Service Uni Graz
 - Network Storage
 - Digital Documentation & Metadata
 - eLabFTW
 - GITlab at TU Graz and Uni Graz

Part 4: Appendix(5/15)

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Part 4: Appendix(6/15)

- 4.2 Bibliography

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Part 4: Appendix (10/15)

- 4.3 List of Figures
 - Fig. 1: Magnifying glass (AI-generated image created by the author using the Academic AI Image Generator, June 17, 2026).
 - Fig. 2: Work Desk (AI-generated image created by the author using the Academic AI Image Generator, June 25, 2026).
 - Fig. 3: Cover: @Springer Publishing, journal *Advanced Composites and Hybrid Materials* (2026). Used as a citation in accordance with § 42f of the German Copyright Act (UrhG); not licensed under CC BY 4.0. Available at: <https://link.springer.com/journal/42114> (accessed May 28, 2026)
 - Fig. 4: Illustration of plagiarism check. Wikipedia: GuttenPlag Wiki. Available at: https://de.wikipedia.org/wiki/GuttenPlag_Wiki (accessed April 9, 2026)
 - Fig. 5: Erlenmeyer flask (original AI-generated image, created with Academic AI Image Generator, June 25, 2026).
 - Fig. 6: Screenshot. Speakola Richard Feynman. Speakola (2026). Photo accompanying: Richard Feynman – “Cargo Cult Science” speech, Caltech 1974. Available at: <https://speakola.com/grad/richard-feynman-caltech-1974> (Accessed May 13, 2026)

Part 4: Appendix (11/15)

- 4.4 Licensing
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Part 4: Appendix (12/15)

- 4.5 AI Use
 - AI Use in this document
 - Text and accessible design: M365 Copilot and GPT-5 were used to correct style, shorten text and ensure accessible design. All decisions regarding content and changes to content, as well as word choice and rewording, were made exclusively by the author.
 - Self-generated images and text visualizations were created using Academic AI (Graz University of Technology).
 - DeepL (2026) was used to support translation and to check for grammar and style. Changes to the content or phrasing were made exclusively by the author.

Part 4: Appendix (13/15)

- 4.5 AI Use: Prompts
 - Self-generated images were created using Academic AI (TU Graz):
 - Academic AI, prompt dated 13 May 2026: “Depict the slogan ‘Every game has rules. Master the rules, win the game!’ as a piece of wall graffiti. Use bright colours. The lettering should be very legible (semi-wildstyle). The lettering should not be on a single line, but should span at least three lines. The graffiti should consist solely of the lettering.” Used to create “Fig. 1: Graffiti”.
 - Academic AI, prompt dated 17 June 2026: “Depict, schematically, a sheet of paper with writing on it being examined through a magnifying glass. The characters should only be hinted at; no actual letters should be recognizable.” Used to create “Fig. 2: Magnifying glass”.
 - Academic AI, prompt dated 25 June 2026: “Depict a broken, upright laboratory glass or flask. It should be a schematic representation, but the contents of the glass may be coloured. The shards lying around should be similar in size and shape to the broken shards.” Used to create “Fig. 7: Broken laboratory glassware”.

Part 4: Appendix (14/15)

- 4.5 Use of AI: Prompts
 - text visualizations were created using Academic AI (Graz University of Technology).
 - Academic AI, prompt dated 15 May 2026: “The image should look like a yellow Post-it note. Write the following text on it in clearly legible handwriting: ‘Academic integrity = attitude’ and, below that, ‘GWP = behaviour!’ The text should be centred and large enough to fill the entire Post-it note.” See slide 12 for a representation of the text on the Post-it note.
 - Academic AI, prompt dated 20 May 2026: “The image should look like a yellow Post-it note. Write the following text on it in clearly legible handwriting: ‘A great many institutions already have detailed guidelines for writing seminar papers and dissertations!’ The text should be large enough to fill the entire Post-it note.” See slide 26 for a visual representation of the text on the Post-it note.
 - Academic AI, prompt dated 27 May 2026: “The image should look like a yellow Post-it note. Write the following text on it in clearly legible handwriting: ‘Incomplete or incorrect references may give the impression of deliberate concealment or a lack of diligence!’ Do not underline anything; centre the text.” Display the text on the Post-it note on slide 24.
 - Academic AI, Prompt vom 02.06.2026: „Das Bild soll aussehen wie ein gelbes Post-it. Schreibe in gut leserlicher Handschrift den folgenden Text darauf: „Im Zweifelsfall: Immer die Quelle angeben!“ Bitte unterstreiche nur “Im Zweifelsfall“, zentriere den Text.“ Zur Darstellung des Texts auf dem Post-it auf Folie 23.
 - Academic AI, prompt dated 8 June 2026: “The image should look like a yellow Post-it note. Write the following text on it in clearly legible handwriting: ‘Read your department’s guidelines!’ Underline ‘Read’. Display the text on the Post-it note on slide 45.”
 - Academic AI, prompt dated 17 June 2026: “The image should look like a yellow Post-it note. Write the following text on it in clearly legible handwriting: ‘Make sure, through good time management, that you are not even tempted to use unauthorised aids!’ Underline ‘not even’.” The text on the Post-it note is shown on slide 46.

Part 4: Appendix (15/15)

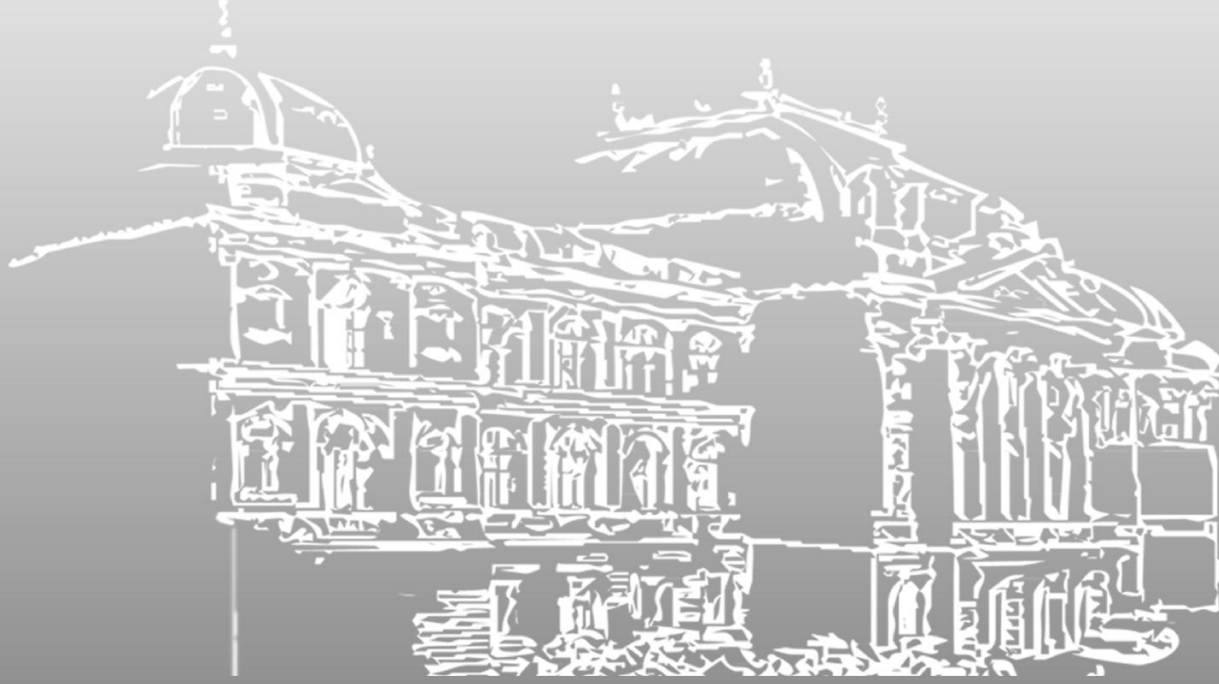
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