

# Publication-based doctorates- TUM School of Engineering and Design

Every doctorate at the School of Engineering and Design contains already published scientific contributions [§ 8, sentence 3, 1.f of the TUM Doctoral Regulations (Statutes of 23. 08. 2021)]. Publication-based doctorates represent an alternative to the classic monograph for doctoral candidates. Already published components of the dissertation must be clearly marked as such or results used from them (figures, tables or parts of the text) must be cited accordingly. Publication-based doctoral theses also contain one or more previously unpublished parts (see item "Text part" below).

The requirements listed below take into account the different relevant publication formats (e.g. the value of conference articles with full-paper peer review) in the different departments of the School of Engineering and Design. They are to be understood as guidelines according to §7(3) sentence 2 of the doctoral regulations (statutes of 23.08.2021) for publication-based doctorates.

## Requirements for the publication-based doctorate

- **Role of the supervisor:** The supervisor decides whether the publication-based doctorate as a whole demonstrates the doctoral candidate's ability to conduct independent scientific work, whether the results of the publication-based doctorate are presented in a clear and comprehensible manner and whether the publication-based doctorate makes a new, continuing and coherent scientific contribution [§7(2) TUM Doctoral Regulations (Statutes of 23 August 2021)].

The supervisor is therefore the only reliable contact person for the individual publication-based doctorate.

- **Extent of publications and publication stage:** The TUM doctoral regulations require the inclusion of at least two accepted publications. The status proof "accepted article" can be provided via correspondence, e.g. with the journal.

In addition, the scope of the integrated publications and the associated text section must be equivalent to the corresponding scope of a monograph. For orientation purposes, the ED generally recommends including two to three accepted publications in the text section.

The equivalence between a publication-based doctorate and a monograph is checked in the first step by the supervisor before the doctorate is submitted and in the second step by the reviewers of the examination board.

- **Rank of the publications:** According to the doctoral regulations 2021 (statutes of 23.08.2021), the included publications must have been accepted by an internationally disseminated publication body with peer review procedures. The quality standard of the ED is "full-paper peer review", such as:
  - ISI-listed journals (or Web of Science or Scopus),
  - international conference papers with full-paper peer review, and/or
  - other equivalent publications corresponding to the subject culture.

The supervisor initially decides on the rank of the publications. The reviewers of the examination board must ultimately assess the peer review and the value of the publications.

As a rule, publications that have already been made before entering the TUM-GS cannot be included as a publication in the dissertation.

- **Text section:** The text section must be designed in such a way that the scientific problem, the approaches used to solve it, the results achieved and conclusions drawn as well as the related literature are clearly expressed. The publications must be placed in an overarching scientific context and the added value beyond the individually used publications must be expressed (cf. §7(3) of the doctoral regulations (statutes of 23.08.2021)).
- **Main/co-authorship:** The doctoral candidate must be the main or first author of at least two of the included articles and must have been the lead author of the publication. This means that he/she has been significantly involved in the publication, has taken on a leading function and that the publication would not have come about without this involvement.

The contribution (in percent, if applicable) and which parts of the publication were contributed by the individual authors must be explained in a statement. This can also be done via a so-called "CRediT author statement" (see e.g. <https://www.elsevier.com/authors/policies-and-guidelines/credit-author-statement>) or via the templates (template GC-ED or template TUM-GS) using the CRediT taxonomy. This statement must be signed by the co-authors.

- **Impartiality of the reviewers:** In principle, at least one reviewer must be appointed who is not a co-author on any of the publications of the doctorate. If participating authors are proposed as examiners beyond the minimum number of publications to be included, this is possible, provided that they are not lead authors.
- **Role of the reviewers:** The quality assurance after submission is primarily the responsibility of the reviewers of the doctoral examination board, who independently evaluate the scientific claim of the thesis.
- **Formatting:** Publications can be integrated as chapters or appear separately in the appendix of the dissertation.
- **Language:** According to the doctoral regulations 2021 (statutes of 23.08.2021), integrated publications must in principle have been produced in English. Exceptions apply to subject areas in which German-language publications have "more weight".