

Protocol for the Assessment of the Final Master Project Industrial Design (FMP-ID)

1. Graduation committee Final Master Project

The Examination Committee of Industrial Design (EC-ID) approves the composition of all Final Master Project (FMP) graduation committees, including the designated role of all committee members. A FMP graduation committee is appointed to assess one or more Final Master Project (FMP) students in agreement with the FMP protocol and the Examination Regulations (ER).

The FMP committee consists of at least three examiners:

- The **Independent examiner** is the chair of the FMP graduation committee. This **Independent examiner** is an examiner from the department of Industrial Design, who provides complementary expertise to that of the other examiners. The additional roles of the independent examiner is to chair the FMP meeting, to safeguard that the FMP procedure is followed as specified in this document, to ensure that the grade is motivated, and to guarantee that the FMP Rubric is filled in in such a way that it reflects the opinions and remarks of all examiners. This FMP Rubric does not only provide feedback to the student being assessed, but also towards the Examination Committee in charge of safeguarding the quality of examinations in general, and final examinations in particular. The chair approves the uploading of the FMP Rubrics in Canvas by the mentor. In case the graduation committee concludes that a retake is required, the chair ensures that the motivation for the retake and the conditions that are set for it are adequately documented.
- The student's **Graduation mentor**, assists in the documentation of the graduation meeting by summarizing the feedback of all examiners in a draft Rubric which is distributed to the other examiners for possible amendments. The Graduation mentor ensures that the grade is communicated to CSA-ID.
- The **Expert examiner** has in-depth knowledge in the domain of the FMP; in case this person is not an appointed examiner, then this person is appointed by the EC-ID as examiner for the student involved.

Additional experts (e.g., Ph.D. students or industrial clients who were stakeholders during the implementation of the FMP) may be invited to the FMP assessment and presentation to advise on the quality of specific aspects of the FMP. The experts (in the role of advisor) are allowed to be present at the Oral Examination, but are not allowed to take part in the Deliberation. Students can take the initiative to invite the experts to the graduation session; in consultation with the examiners. In case the additional experts are not present but provide advice, the mentor communicates with these advisors and is responsible for reporting their advice to the other members of the graduation committee.

If the appointed graduation committee cannot perform the FMP assessment at the agreed time, e.g., due to illness of one of its members, then CSA-ID is informed. CSA-ID will assess the situation and will take appropriate measures in agreement with the EC-ID (such as postponing the assessment and/or replacing a member).

To assure objectivity each graduation committee is composed of academic staff members with complementary expertise, background, and a representation from both research groups.

The EC-ID approves the composition of the FMP assessment committees well in advance of the graduation date. CSA-ID in consultation with Manager ESA-ID proposes the composition of the FMP committee taking into consideration the following criteria:

- The Independent examiner and chair of the FMP committee will function as an independent examiner and is added to the graduation committee after the M21 semester.
- The Graduation mentor of the student is often an expert in one of the Expertise Areas that the student specializes in. Most frequently, this FMP graduation mentor has supervised the student for at least 1 year (including the FMP semester). The FMP graduation mentor belongs to one of the ID research groups.
- The expert examiner covers the other Expertise Area the students specialize in (complementary to the Expertise Area covered by the graduation mentor) but can provide any input that he deems relevant for the FMP assessment. This examiner is involved in the FMP Proposal and/or M21 Option(s) competence assessments for students who started between September 2018 and September 2021 and will be the examiner that is involved in the Preparation FMP or FMP Proposal (in case of courses or an Exchange) competence assessments for students who start in September 2021 or after.

To assure objectivity, at least one of the three examiners is a member of a different ID research group than the mentor. The composition of the FMP committees will be finalized and formally approved by EC-ID before the assessment on the FMP Proposal (or for students who start in September 2021 before the competence assessment of the Preparation FMP or FMP Proposal (in case of courses or an Exchange)). CSA-ID will inform staff and students on the composition and roles of the graduation committee.

2. Assessment procedure for the Final Master Project

The FMP assessment is based on the following deliverables:

1. In the **FMP report** the student: a) documents the proposed concept or product (i.e. the **project outcomes** such as the demonstrator, data collection and analysis, research results, user evaluations, value proposition, required technology, etc.), and b) describes the **design process** that was followed and its effect on the major design decisions;
2. In the **portfolio**, the student documents and reflects, **by means of concrete examples**, on the **development in the expertise areas** across the entire master's program. The student indicates and describes the two expertise areas which they consider to be of primary importance for their claimed development.
3. **Presentation** and oral examination.

The members of the FMP graduation committee receive a copy of the report and the portfolio by the corresponding deadlines communicated by ESA-ID. Students should sign the TU/e statement (Declaration TU/e Code of Scientific Conduct Master Thesis) indicating that the FMP

was realized in accordance with the code of conduct for scientific integrity and deliver this via the Delivery and Graduation Information Form. Provided that the FMP is not conducted under IPR (Intellectual Property Right) protection, the mentor will screen the report (and, if deemed appropriate, extracts of the portfolio) using the TU/e plagiarism system (OURIGINAL) to ensure that they do not contain instances of (textual) plagiarism. The mentor may also verify that the visual material being used does not contain plagiarism.

Before the FMP meeting, the examiners have acquainted themselves with the submitted material (deliverables 1 and 2).

1. The Independent examiner/chair reads the portfolio and prepares a line of questioning related to the development of expertise areas, with a focus on the primary expertise areas identified by the student.
2. The Graduation mentor reads both portfolio and report and prepares a line of questioning related to both the project outcomes and design process, as well as the development in (primary) expertise areas.
3. The expert examiner reads the report and prepares a line of questioning related to the project outcomes and the design process.

The FMP graduation session itself consists of four parts:

1. **Presentation:** 20 minutes; approximately 10 min on project and 10 min on professional identity, vision and competence development throughout the master program; this presentation is open to the public. The time spent to discuss the FMP and portfolio should be balanced, i.e., approximately 10 minutes each.
2. **Oral Examination:** The second part of the FMP graduation session is closed to the public and involves the student and the examiners. Advisors are allowed to attend and ask questions. The duration of this oral examination is approximately **40 minutes** and involves both questions about the development in expertise areas (primarily by the Independent/chair and graduation mentor) and the FMP (primarily by the graduation mentor and expert examiner). It is the responsibility of the Independent examiner/chair to safeguard that the examination addresses all aspects included in the FMP Rubrics. Specifically, it is important that the FMP outcomes and design process, the Vision and Professional Identity, and the two primary expertise areas claimed by the students are all addressed in this examination.
3. **Deliberation:** The third part of the FMP graduation session is a deliberation of at most **25 minutes** between the three examiners, where the items included in the FMP Rubrics are used to structure the discussion. The major outcome of this deliberation is a grade on a scale of 0-10 in full or half marks that all examiners agree upon. The Independent examiner/chair of the graduation committee, is responsible for moderating the discussion. The examiners need to decide if **all assessment criteria**, i.e., Overall Competence of Design (OCD), Scientific and Professional Skills (SPS), Vision and Professional Identity (PIV) and Expertise Areas (EA), **have been successfully passed**. Assuming that the examiners agree on their verdict, the graduation mentor is expected to draft a first version of the FMP Rubrics and collects the qualitative feedback that should be included in it. The mentor can finish this draft version of the Rubrics after the graduation session before distributing it to the other examiners.

Possible verdicts:

- **Failing OCD** implies an insufficient grade (of 5.5 or below) for the FMP assessment without the possibility for a retake.
 - In case **any criterium except OCD is judged insufficient**, then the examiners discuss the requirements for raising the level to at least ‘sufficient’ (as defined in the FMP Rubrics). In case the examiners are of the opinion that fulfilling these requirements is feasible within the 3-week period available for the FMP retake, they propose a grade of at most 5 with a possibility for a retake and formulate the conditions for the retake. In case they are of the opinion that fulfilling the requirements is not feasible within the 3-week period available they propose an insufficient grade (of 5.5 or below) without the possibility of a retake.
 - In case **all assessment criteria (OCD, SPS, PIV and EA) are passed**, the examiners agree on a grade on a scale of 6.0-10 in full or half marks. While this grade does not need to be specified as a weighted sum of scores on individual assessment criteria, a division of 50-50 between OCD and SPS and the combined areas PIV/EA can be considered as a guideline in the discussion.
4. **Qualitative Feedback:** After the committee deliberation, the student is provided with short qualitative feedback on their performance by the Graduation mentor. The actual grade is not shared as the grades of students need to be communicated through Osiris.

The Independent examiner/chair ensures that the other examiners are given the opportunity to amend the draft version of the Rubrics before approving the uploading of the final Rubrics in Canvas by the mentor. The graduation mentor will communicate the grade to CSA-ID. CSA-ID will record the grade in Osiris. This result is binding.

The Independent examiner/chair consults with the EC-ID in case no agreement could be reached by the graduation committee on either the grade or the argumentation in the FMP Rubrics, in which case the EC-ID will mediate to reach an agreement. In case such an agreement cannot be reached, the EC-ID may decide to involve an extra examiner.

The student passes the FMP assessment if the grade is 6.0 or higher.

To guarantee the quality of the FMP procedures and final examinations, the Safeguarding Committee, a sub-committee of the Examination Committee, will conduct twice a year a check of the quality of the FMP procedures (See also Art. 2.1 of ER 2022/2023 regarding Safeguarding the quality of examinations and final examinations. See also Safeguarding Protocol of the Examination Committee 2022/2023 in the Examination Regulations of the ID department).

3. Quality Assurance of the Final Master Project assessment

In case of a marginal grade of 6 or an “Excellent” grade of 9 (or higher), an explicit argumentation for proposing this grade, with reference to the FMP Rubrics, should be provided to the EC-ID for the sake of the quality monitoring and control that the EC-ID is legally obliged to perform on a regular basis. (See also Safeguarding Protocol of the Examination Committee 2022/2023).

At the low end, the EC-ID needs to ensure that graduation committees do indeed provide sufficient arguments for why a student passes (failing a student is, from the point of view of the EC-ID, a lesser issue as it does not compromise the quality of the ID diploma).

At the high end, the EC-ID monitors the number of Excellences being awarded as well as the arguments being used for attributing such a grade, to avoid the grade of Excellence devaluating.

All information, deliverables, examiners' assessment forms and assessment Rubrics with completed argumentation for low/high grades, feedback, etc., are saved and registered (in Canvas and Osiris). The examiners make sure that all information and deliverables are saved in Canvas and Osiris for the purpose of assuring the quality of the procedures by the EC-ID (or an accreditation committee).

4. Retake of a Final Master Project assessment

In case the FMP assessment retake relates to a failed assessment, the examiners of the original graduation committee need to assess, based on the material provided for the retake (updated report, portfolio and/or presentation), whether or not **ALL formulated conditions have been met** (See FMP procedures for retake in FMP Canvas page). If this is the case, then a grade in the range 6.0-10 needs to be agreed upon. If some conditions have not been met, then an insufficient grade (5.5 or below) should be delivered for the FMP assessment retake as some assessment criteria remain at an "Insufficient" level.

In case students apply for a retake with the intention of improving their grade, then the requirements for this retake should have been agreed upon by the Independent examiner/chair and Graduation mentor.

In case not all members of the original graduation committee are available to assess the retake, the EC-ID can appoint one or more replacements. The graduation committee may refer to the earlier assessment and can decide to skip parts of the assessment procedure for the retake (such as the presentation, oral examination, ...) if they can argue why they are not needed to propose a new grade and to formulate an updated assessment on the (relevant) criteria in the FMP Rubrics.

The fact that the student has been provided with extra time and feedback for the updated deliverable(s) can be considered when deciding the grade for a retake. This means that the grade for a retake can also be lower than the grade for the original assessment.

The grade resulting from the retake should be communicated, together with supporting material such as the updated Rubrics, in the same ways as discussed before.

5. Retake of a Final Master Project assessment

The student receives written feedback of the assessment in the form of the FMP Rubrics. The student can make use of the right to object to the procedure followed in their assessment, as noted in Article 4.6 part 7 of the PER/OER and articles 5.1 and 5.2 of the Examination Regulations of Industrial Design.

6. Assessment Criteria in the FMP Rubrics

Overall Competence of Design (OCD)

- a. Integration of Expertise Areas *Project*
- b. Design and Research Processes
- c. Demonstrator

Scientific and Professional Skills (SPS)

- a. Presenting
- b. Reporting and Dealing with Scientific Information
- c. Organizing and Planning
- d. Reflecting
- e. Cooperating

Vision and Identity (PIV)

- a. Professional Identity (PI)
- b. Vision

Competence development (EA)

- a. Integration of Expertise Areas
In the Competence Profile of the student

The following aspects must also be checked for the purpose of accountability:

- The TU/e statement (Declaration TU/e Code of Scientific Conduct Master Thesis) document (signed by the student) is delivered via the Delivery and Graduation Information Form.
- The FMP report submitted by the student has been checked with the TU/e plagiarism digital system, OURIGINAL, by the graduation mentor (in case of no Intellectual Property Right -IPR-).

The criteria OCD, SPS, PIV and CD are rated as either pass or fail. The entries in the FMP Rubrics are assessed on a 4-point ordinal scale with levels: insufficient, sufficient, good and excellent, and this scoring is clarified using qualitative feedback. The FMP Rubrics are used as a tool to perform a systematic analysis of various aspects of the deliverables produced by the FMP student. No fixed weighting is applied to the scores to determine the final grade; instead, the members of the graduation committee reach a consensus on the grade through discussion.