

# JOINT MASTER THESIS PROJECTS AT THE JKU INSTITUTES IPMT & IQD

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## 1. General idea

Students of the **MSc studies “Management in Polymer Technologies”** have the option to write a **joint interdisciplinary master thesis with the two institutes IPMT and IQD**. The advantage of writing an interdisciplinary master thesis is to work at the interface between polymer engineering and technology and business management for sustainability and circularity. Exemplary topic areas (but not exhaustive) are:

- Circular plastics economy (e.g. managing plastics value cycles across organizations)
- Design for circularity (e.g. design-for-recycling and reuse in plastics products)
- Cradle-to-cradle design (e.g. managing substances of concern in design and value chains)
- Digitalization of plastic products and related processes (e.g. id and tracking of packaging)
- Quality and environmental management in the plastics industry (e.g. sustainability program)
- Sustainable development goals and the plastics industry (e.g. regulations, programs and plans to reduce plastic waste and enhance product safety and health)

Students have to choose either engineering or management as main focus with implications for the lead and supporting supervisor and related methods:

- a) **Engineering (lead supervisor IPMT):** methodological approaches such as empirical lab work in the field of material characterization and testing including (fracture) mechanical, thermo-analytical or spectroscopic methods
- b) **Management (lead supervisor IQD):** social science (e.g. expert interviews, case studies), design science and systematic literature reviews.

## 2. Requirements for application at the institutes

If a student fulfills the formal requirements for writing a master thesis in MPT, he/she should **get in touch with the potential master thesis (lead) supervisor or the respective institute** where he/she plans to write the master thesis. After having clarified which possible interdisciplinary topic might be interesting, it has to be finally decided which institute takes the **lead supervision**. The lead supervisor will guide the student through the master thesis development process from beginning to the end (in terms of content, methodological and administrative supervision), whereby the student gets additional input with regards to content and/or methods from a supervisor of the other institute (co-supervisor). Depending on the lead, there are **two different procedures** concerning the master thesis seminar (see chapter 3).

### 2.1. Specific process needs for the IQD

If the lead supervision is situated at the IQD,

- the student has to **formally apply for the master thesis according to the common rules of IQD's master theses**<sup>1</sup>.
- the application and subsequent registration for the master thesis seminar should (if anyhow possible) occur **in the semester before writing** the master thesis! This is because the master thesis seminar will help you frame and define the topic.

## 3. Master thesis seminar and procedure of supervision

MPT students writing a joint master thesis will have to **officially subscribe to both master thesis seminars at IPMT AND IQD**. However, the **certification will be issued only by IPMT**.

### 3.1. IQD Lead supervision

MPT students writing a master thesis with a lead supervision at the IQD (and a co-supervision at the IPMT), will have to pass through the **“conventional” master thesis seminar procedure** like all other IQD master students:<sup>2</sup>

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<sup>1</sup> Please check master thesis section on the IQD's website: <https://www.jku.at/en/institute-for-integrated-quality-design/teaching/masters-theses/> (19.10.2020)

<sup>2</sup> Please check the IQD website for the latest information of the IQD Master Thesis Seminar.

- attend the required sessions/appointments (approx. 4-5 sessions) of the master thesis seminar;
- hold **2 presentations** (1 on the *first ideas* for the thesis, 1 on the *final exposé*);
- get **additional input from the IQD scientific team** on relevant methods and contents (e.g. literature reviews, case study research, how to write a management-oriented master thesis etc.);
- get **constructive feedback** on the master thesis *idea and concept* from the professors, supervisor, and colleagues.

In addition to the participation in the IQD master thesis seminar, he/she will have to

- **attend minimum 2 sessions at the IPMT master thesis seminar,**
- of which one session will be the **final presentation of the master thesis** (the IQD lead supervisor will take part in this final presentation).

In order to gain more knowledge about management in the context of the circular economy and sustainable development, the student can attend additional sessions from the IQD master thesis seminar or the IPMT master thesis seminar on a **voluntary base** and/or also present his/her **intermediate results** (at the IQD master thesis seminar) in order to get additional feedback.

| Tasks                              | Institute                               | IQD                    | IPMT                      | Σ         |
|------------------------------------|---|------------------------|---------------------------|-----------|
|                                    | Number of MT seminar sessions to attend |                        | ~4                        | minimum 2 |
| Number of presentations to be hold |   | 2<br>(idea and exposé) | 1<br>(final presentation) | <b>3</b>  |

Table 1: Requirements for IQD lead supervision

### 3.2. IPMT Lead supervision

MPT students writing a master thesis with a lead supervision at the IPMT (and a Co-supervision at the IQD), will have to pass through the “conventional” Master thesis seminar procedure like all other IPMT master students, which means attending minimum 5 sessions in total:

- 3 sessions have to be attended at the IPMT master thesis seminar
  - one session will be the **final presentation of the master thesis** (the IQD lead supervisor will take part in this final presentation)
- 2 sessions minimum must be passed at IQD master thesis seminar:
  - **2 presentations** (1 presentation on the *first ideas* for the thesis, 1 on either the *final exposé* or on the *intermediate results*),
  - get **additional input from the IQD team** on relevant methods and contents (e.g. literature reviews, case study research, etc.), and
  - get **constructive feedback** to his/her Master thesis idea and concept from the professors, supervisor and colleagues

In order to gain more knowledge about management and sustainability, the student can attend additional sessions from the IQD master thesis seminar or the IPMT master thesis seminar on a **voluntary base**.

| Tasks \ Institute                       | IQD  | IPMT                      | Σ |
|---|--|---------------------------|---|
| Number of MT seminar sessions to attend | minimum 2                                      | 3                         | 5 |
| Number of presentations to be hold      | 2<br>(idea and exposé or intermediate results) | 1<br>(final presentation) | 3 |

Table 2: Requirements for IPMT lead supervision

#### 4. Guidelines for written master thesis

The style guideline differs for each institute:

- IQD: the student has to adhere to the Guidelines for academic writing outlined at the IQD website.<sup>3</sup> A typical master thesis at the IQD will have a length of about 80 pages.
- IPMT: For the guidelines of the written master thesis with the lead supervision at the IPMT, please contact your supervisor.

#### 5. Formal registration form and evaluation of master thesis at JKU

##### 5.1. Registration of master thesis

During the Master Thesis Seminar – usually after the exposé was accepted – each master thesis has to be registered at the Examination and Recognition Services at the JKU with a specific form. As the Examination and Recognition Services accepts to only mention one supervisor on the form, please indicate the professor of the lead institute:

- IQD: Prof. Dr. Erik G. Hansen, or
- IPMT: o.Univ.-Prof. DI Dr. Reinhold W. Lang

##### 5.2. Evaluation of master thesis

The institute holding the lead supervision is responsible for recording the grade of the master thesis, after consultation with the co-supervision institute (lead supervisor prepares a pre-assessment of the master thesis which will be mutually discussed). On the final evaluation sheet, all four involved supervisors (each main and co-supervisor both at the IQD and IPMT) are mentioned. The lead supervision institute is highlighted with *\*lead supervision*.

##### 5.3. Evaluation of master thesis seminar

The grade for the master thesis seminar will always be recorded by the IPMT.

If the lead supervision is located at the IQD, the evaluation criteria for the master thesis seminar of the IQD will be used. The subgrade of the presentation of the intermediate results at the IPMT will be included in the evaluation.

<sup>3</sup> <https://www.jku.at/en/institute-for-integrated-quality-design/teaching/masters-theses/> (19.10.2020)

## **6. Possible master thesis topics**

The student can develop a master thesis topic on his/her own (in coordination with the supervisor). For the list of current topics please contact your potential supervisor or have a look at the respective website.<sup>4</sup>

## **7. Current master thesis seminars**

For having an overview of the current dates of the master thesis seminars, please have a look into KUSSS or get in contact with your potential supervisor.

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<sup>4</sup> <https://www.jku.at/en/institute-for-integrated-quality-design/teaching/masters-theses/> (17.11.2020)