

# The Credit System of the István Sályi Doctoral School in Mechanical Engineering Sciences

## 1. Introduction

The PhD program builds up from a **training and research part** (1-4 semester) and, a **research and dissertation part** (5-8 semester), which mean totally a 4-year program for the doctoral students.

## 2. Obtainable credits in the 1-4 semester – Training and Research Part

During the training and research period in the first four semesters the PhD student participates in theoretical and practical training related to the selected research topic, collects information in order to establish the topic of the dissertation and performs literature review. Hereby, the doctoral student can create the basic conditions for his original research with new scientific results, and makes substantive research work with the research infrastructure. The PhD student presents his results in the reporting system of the Doctoral School and in the publicly available publication possibilities.

Therefore in this training and research part the obtainable credits can be connected to these activities. In the following subchapters the details of this system are described according to the main scope of the activities.

### 2.1. Exams

Minimum 8 subjects have to be taken. (It depends on the previous trainings and the selected topic. The Council of the Doctoral School may require further subjects if the supervisor, the head of the topic group or the topic field propose.)

In general, the obligatory subjects are:

- min. 3 subjects from natural scientific foundation,
- min. 1 subject from professional basement,
- min. 2 subjects related to the complex exam.

Suggestion for the preparation:

- min. 3 subjects in the first semester,
- min. 3 subjects in the second semester,
- min. 2 subjects in the third semester.

In the sample curriculum the subjects marked by 'o' or '+' are obligatory. 5 credits belong to each subject, so for the obligatory 8 subjects min. 40 credits.

The selection of Fundamentals of Materials Science, Machine Structures, Continuum Mechanics, and Thermodynamics is recommended for the non mechanical engineer students. According to the resolution of the Council of the Doctoral School the candidate can release from certain subjects depending on his diploma.

On the basis of the successfully taken exams from subjects the following amount of credits should be fulfilled:

min. 40 credits.

Besides the obligatory subjects the PhD students can take optional course-units from their educational programme. The value of optional subjects is 2 credits. Credits can be given for maximum 2 optional subjects, therefore

max. 4 credits can be obtained.

The doctoral student can take more optional subjects than two, however further credits cannot be given. Optional subjects can be taken in accordance with the support of the supervisor, the head of the topic group and topic field.

## **2.2. Participation in Education**

It is recommended in the first four semesters (0- 5) credits/semester:

max. 20 credits.

The departments cannot require more than 4 contact lessons per week. If the PhD student would be involved in more teaching activity the supervisor should discuss it with the head of the topic group and topic field, and the permission of the Council of the Doctoral School is necessary. This educational activity should be based on contract.

## **2.3. Research Seminar of the Doctoral School**

The attendance of the PhD students is obligatory during the regular Research Seminars organized by the Doctoral School. 0-10 credits can be given for the presented report during the Research seminars (After the elaboration of the professional materials determined by the supervisor the doctoral student presents the results in the Seminar, focusing on the main objectives and their critical analysis, including the future steps, too.) The PhD student has to make minimum 2, maximum 4 research seminar reports in the four semesters of the training and research period. The obtainable credits:

min. 20, max. 40 credits.

## **2.4. Involvement in departmental/institutional research projects**

The doctoral students can obtain (0-5) credits/semester in the first four semesters if they participate in departmental/institutional research work. (The possible credits are proposed by the experts assigned by the Council of the Doctoral School.) For departmental/institutional research work

max. 20 credits can be obtained.

## **2.5. Publication the results of the original research work**

From publishing the results of the original research work in conferences, symposiums and journals, books and other proceedings

min. 16 credits are required.

In the first four semester it is already suggested to publish in ranked journals and foreign language

conferences (Scopus indexed publication possibilities are recommended).

## **2.6. Credits after the second language exam**

According to the Operation Rules of the Doctoral School for the successful fulfilment of the second language exam the following credits can be given:

- the PhD language exam of the IOK (Language Teaching Centre): 15 credits,
- intermediate language exam: 20 credits
- advanced language exam: 25 credits.

## **2.7. Credits after the fulfilment of complex exam**

The doctoral student has to obtain at least 90 credits in the training and research part. All necessary credits from the subjects have to be obtained, furthermore the language requirement of the PhD degree has to be fulfilled as well. For the successful fulfilment of the complex exam:

max. 25 credits are given.

The doctoral student gets the right to enter to the four semester research and dissertation part with the successful fulfilment of the complex exam.

## **3. Obtainable credits in the 5-8 semesters – Research and Dissertation Part**

In the doctoral training the PhD students have to obtain 240 credits in the 8 semesters. In the training and research part (1-4 semester) the 90 credit requirement for taking the complex exam with the 25 credits of the successful complex exam mean together 115 credits. The obtained credits can be certainly higher if the doctoral student overfulfil the requirements for the publications and the language skills. However, in the worst case in the second, research and dissertation part the candidates have to obtain further 125 credits in order to get the required 240 total credits.

Since the second part of the PhD program the doctoral students basically make their research work, publish their scientific results, report the fulfilment of their research work and prepare their dissertation which is capable for the departmental debate, therefore credits cannot be obtained from training (subjects).

In the next subchapters the credit values of the main scope of the activities are summarized.

### **3.1. Research Seminar of the Doctoral School**

The participation of doctoral students in the Research Seminars is also obligatory in this part. For the reports 0-10 credits can be given. (After the elaboration of the professional materials determined by the supervisor the doctoral student presents the results in the Seminar, focusing on the main objectives and their critical analysis, including the future steps, too.) The PhD students have to make minimum 2 maximum 4 reports in the four semesters in the research and dissertation period. The available credits are:

min. 20, max. 40.

### **3.2. Involvement in departmental/institutional research projects**

The doctoral students can obtain (0-5) credits/semester in the first four semesters if they participate

in departmental/institutional research work. (The possible credits are proposed by the experts assigned by the Council of the Doctoral School.) For departmental/institutional research work

max. 20 credits can be obtained.

### **3.3. Research reports**

In this term the regular written summary of the candidate's research work is especially important, which in each semester means a 15-25 page long document evaluated by the supervisor. The Council of the Doctoral School approves the report and determines the credit value (0-15).

max. 15 credits/semester, for the 3 semesters (5<sup>th</sup>, 6<sup>th</sup> és 7<sup>th</sup> semester) max. 45 credits can be obtained.

### **3.4. Participation in Education**

The PhD student can obtain (0-5) credits per semester for participating in the education activity of the department/institute:

max. 20 credits.

The departments cannot require more than 4 contact lessons per week. If the PhD student would be involved in more teaching activity the supervisor should discuss it with the head of the topic group and topic field, and the permission of the Council of the Doctoral School is necessary. This educational activity should be based on contract.

In the 7<sup>th</sup> and 8<sup>th</sup> semester the candidates can get release from education.

### **3.5. Publication the results of the original research work**

From publishing the results of the original research work in conferences, symposiums and journals, books and other proceedings

min. 20 credits are required, which means totally 36 credits together with the min. 16 credits obtained in the training and research part.

In this term it is especially important to publish the results in ranked conferences and journals.

The 1<sup>st</sup> Appendix of the Regulation of the Doctoral School includes the credit values of the different publication types.

### **3.6. The obtainable credits for the departmental debate of the PhD thesis**

The prepared dissertation has to be admitted to scientific departmental debate at least one month before the final submission of the PhD thesis. After the successful departmental debate the obtainable credits can be

max. 20 based on the chairman's proposal.

#### 4. Further information about the Credit System

##### 4.1. The required minimum credits are 240 for the pre-degree certificate (absolutorium) stating that all course-units and publication, reporting requirements have been completed

From the 240 credits the publication credits have to reach at least the 15% of the total credits (minimum 36 credits), furthermore the PhD students have to fulfil the other existing requirements including their successful performance in the research seminars.

##### 4.2. The pre-degree certificate (absolutorium) is needed for the launch of the doctoral candidate process

##### 4.3. The fulfilment of the minimum publication requirements is also needed for the submission of the PhD thesis

**Minimum 4 publications** are need for the submission of the PhD thesis:

- **minimum two publications are required in foreign language** with the candidate's minimum 50% participation
- further criterion that minimum **one of them has to be peer-reviewed foreign language journal** with the candidate's 50% participation (The supervisor is not counted in the co-authors)
- **minimum another peer-reviewed journal or conference proceeding is needed.** Peer-reviewed journal should have
  - an editor board,
  - has a foreign language summary in a world language,
  - furthermore the paper has a reviewer who prepare a written evaluation.
- in case of conference proceedings the following requirements should be fulfilled:
  - the whole document of the presentation should be included in the proceedings,
  - the proceedings has an ISBN or ISSN number,
  - the one-page abstract is not considered as conference proceeding,
  - in case of peer-reviewed proceeding the author should get a feedback from the organizer committee about the review and the acceptance of the published document,
- from the peer-reviewed journal and conference papers minimum one should be published in a **Scopus-indexed** journal or conference proceeding.

In the following page the credit requirements are summarized in table form for the two terms of the PhD program.

**Training and research period:** first four semesters

Type	Credits	Remarks	Possible credits
Obligatory subjects	5 cr/subject	min. 8 subjects	40 cr
Optional subjects	2 cr/subject	2 subjects	4 cr
Research seminar	0-10 cr/semester	min. 2 max. 4 semesters	min. 20 cr max. 40 cr
Departmental/Institutional research	0-5 cr/semester	max. 4 semesters	max. 20 cr
Yearly report from the research advancement	0-10 cr/semester	2 <sup>nd</sup> and 4 <sup>th</sup> semester	max. 20 cr
Participation in education	0-5 cr/semester	max. 4 semesters	max. 20 cr
Complex exam			25 cr
Publication requirement	Detailed information in the Regulation of the Doctoral School (1 <sup>st</sup> attachment)		min. 16 cr

**Research and dissertation period:** second four semesters

Type	Credits	Remarks	Possible credits
Research seminar	0-10 cr/semester	max. 4 semesters	max. 40 cr
Departmental research	0-5 cr/semester	max. 4 semesters	max. 20 cr
Seminar research reports	0-15 cr/semester	at the end of the 5 <sup>th</sup> , 6 <sup>th</sup> and 7 <sup>th</sup> semester	max. 45 cr
Participation in education	0-5 cr/semester	max. 2 semesters	min. 10 cr, max. 20 cr
Publication requirement	Detailed information in the Regulation of the Doctoral School (1 <sup>st</sup> attachment)		min. 20 cr (+16 cr from the first term)
Departmental debate of the PhD thesis			max. 20 cr