

The István Sályi Doctoral School of Mechanical Engineering Quality Assurance System

1. Introduction

The principles and practical tasks of the School's quality assurance system are based on the principles laid down in the Quality Assurance System of the University of Miskolc, the university's Doctoral Training and Doctoral (PhD) Degree Regulations, and the Operating Regulations of the István Sályi Doctoral School, taking into account the recommendations of the MAB, ODT and ESG2015.

To highlight a few aspects, the School considers it particularly important to evaluate the announcement of topics, the requirements of the admission system, the progress of students, and the performance of lecturers and supervisors, as well as to emphasise the requirements for obtaining a degree.

The findings and elements of the quality assurance system apply to both stages of doctoral training – the training and research stage and the research and dissertation stage – taking into account the different characteristics of the two stages.

2. Mission of the Doctoral School

The mission of the Doctoral School is to provide high-quality scientific and technical education, to train highly qualified senior engineers who perform development and innovation tasks, and to ensure the supply of new teachers and researchers in the school's research areas. Our goal is to produce professionals who are capable of conducting independent research, understanding the systemic relationships within the field of mechanical engineering, conducting excellent research in their own areas of expertise, and publishing their results internationally. In addition to managing research projects, they are able to transfer their knowledge and create and implement innovative results.

Key quality objectives:

Quality	indicator	objective
high scientific standards	publications related to the thesis points of the PhD dissertation	scientific publications in highly rated journals and books
research results promising in terms of applications	external institutional relations	increased level of innovation

international integration	number of theses written in English and publications co-authored with foreign experts	a significant proportion of dissertations are written in English
widely applicable knowledge	employment statistics	preparation for three career paths: research institute, higher education, competitive sector
efficiency	degree completion rate	exceeds the national average

Quality assurance applies to all elements of doctoral training and degree acquisition:

1. the announcement of topics,
2. admission to doctoral training,
3. the curriculum and research component of the programme,
4. monitoring during the programme,
5. the degree award procedure, and
6. follow-up of students who have obtained their degrees.

Supervision of quality-determining activities is carried out by the Doctoral School Council (DIT) in accordance with the procedures and quality assurance elements detailed below.

3. Main elements of quality assurance in doctoral training

3.1. Announcement of topics

Each year, the topics to be announced are approved by the School Council, which examines the scientific and professional performance of the prospective supervisor in the past period. When announcing a topic – in the case of technical and engineering activities – in addition to scientific results, the expected requirement is to provide scientific answers to industrial problems.

Thesis supervisors are expected to be active researchers, which means that the indicators of their scientific publications in the five years prior to the announcement of the topic must meet the publication requirements for obtaining a degree from the Doctoral School (publications in the last five years must meet the minimum requirements for obtaining a doctoral degree).

The supervisor becomes the supervisor of the topic whose topic is accepted by a student who applies for it and enrolls in the doctoral school. The same requirements apply to the supervisor and the co-supervisor.

Accepted topics are publicly announced on the School's website, indicating the purpose of the topic, the tasks to be performed, the industrial background, foreign connections, the supervisor and the department or institute responsible for the topic.

It is a requirement that a supervisor may not supervise more than **four** doctoral students at the same time and must have held a PhD degree for at least three years.

3.2. Admission to the Doctoral School

The Doctoral School regularly holds information days, during which interested students can obtain information about the school's operations and administrative processes and ask questions. We also organise roundtable discussions during which students can provide feedback on the programme.

Prospective students applying for admission must prepare a written Research Plan on the announced topics and fill out the attached "Scoring System for the Admission of Applicants to Doctoral (PhD) Programmes" data sheet containing the admission evaluation. The oral admission examination will include a discussion of general and professional intelligence questions, a presentation of the applicant's prior knowledge related to the chosen topic, and an explanation of the applicant's motivations for applying for the programme. An important element of the admission procedure is the presentation of the applicant's foreign language skills and foreign language communication skills. Our scoring system places strong emphasis on activities during undergraduate studies, language skills, research experience, and ideas related to the chosen doctoral topic. We only recommend applicants for admission if they score at least 70 points out of a maximum of 100 points.

For the admission interview, we establish an Admission Committee, which is usually chaired by the head of the Doctoral School, and whose members are approved by the Doctoral School Council from among the supervisors of the Doctoral School's subject areas.

Admission to the state scholarship programme available to us from the national doctoral framework is decided by the University Doctoral Council on the basis of a ranking based on the points obtained. Applicants for other scholarship programmes must also meet the minimum admission requirements.

3.3. Subjects of doctoral training

The Doctoral School Council decides on the acceptance of subjects into the programme and the renewal of topics based on proposals from the heads of subject areas. The topics must be reviewed at least every three years.

Only those lecturers and researchers with academic degrees who are deemed suitable by the Doctoral School Council to teach subjects in doctoral programmes and who are invited to teach doctoral courses may become lecturers at the Doctoral School. The instructors of the doctoral school are listed in the school's ODT database, and if someone teaches at more than one doctoral school, they must state on their ODT data sheet what percentage of their time they spend at each doctoral school.

Regularly updated, public information on the doctoral school's current training plan, subjects and lecturers can be found on the doctoral school's website under the Training Plan menu item.

3.4. Students' research work

The Doctoral School's Rules of Procedure shall specify the expectations regarding research work carried out during doctoral training and the expected level of independence. Doctoral students shall give at least one professional presentation per year on their research results at the Doctoral School's Research Seminar. Students are also expected to present their research results at public forums, preferably in a foreign language. The Doctoral School ensures that during their training, students have the opportunity to visit foreign universities/institutes where research related to their topic is being conducted, gain insight into doctoral research work at other institutions, and gain experience in research methodology issues.

3.5. Monitoring - Student progress

Admitted students prepare their Training Plan together with their academic supervisor, which is reviewed annually or, if necessary, every six months in line with the semester-based education system, and supplemented or modified as necessary.

An important element of monitoring and supporting student progress is the selection of courses in consultation with the supervisor, the topic group and the topic area leader, the scheduling of these courses, and the evaluation of performance each semester.

Doctoral students prepare a written report on their annual work in consultation with their supervisor, which is approved by the Doctoral School Council.

Students present their annual research reports at the Doctoral School Research Seminar, where they also report on their further research ideas and progress in the research topic of their dissertation. The submitted written material is evaluated in advance by the candidate's supervisor and also verbally at the Research Seminar. At the Research Seminar, the student presents the report in the form of a presentation based on the written research report, and then answers questions from the supervisors and students present at the Research Seminar and defends their report professionally. In the first year of the doctoral programme, the main part of the research report consists primarily of a critical analysis of the literature on the chosen topic and the refinement of the research plan based on this analysis. All PhD students of the School and the student's supervisor are required to attend the Seminar.

We recommend that students give a short progress report twice a semester within their research group. At the beginning of the semester, they should present their plans for the semester, and at the end of the semester, they should report on their progress and achievements.

At the Doctoral School Research Seminar, students report at least once a year in both stages of their doctoral training, but additional research reports may also be included at the request of the student and their supervisor.

At the end of each semester, students compile a Credit Completion Sheet summarising the credit points they have earned from completing courses, research seminar reports, departmental/institutional research, teaching activities and publications. The recommended credit completion is 30 credit points per semester. The minimum required credit completion per semester is 20 points.

The Doctoral School Council evaluates students' academic performance and progress each academic year on the basis of written work reports and professional seminars. The work report to be submitted each semester contains summary indicators of academic and research results (including publications, conference and seminar presentations related to the doctoral topic) in accordance with the form available for download from the doctoral school's website. The student and their supervisor are informed of the evaluation.

The Doctoral School Council monitors the career paths of students who have obtained their degrees using the monitoring procedure (based on university questionnaire data collection). The results of this are published in the periodic self-evaluations of the doctoral school in the database at www.doktori.hu. The self-evaluation also includes other statistical data related to the training (student numbers, average time to degree completion, degree completion rate, etc.).

3.6. Publication requirements

The publication requirement for the training and research phase is 16 points, based on the Doctoral School's Publication Requirements, which consists of journal articles, conference publications, and professional presentations. In the second phase of doctoral training – research and dissertation – the minimum publication requirement is an additional 20 credit points. In order to meet these minimum publication requirements, publications as detailed in the Doctoral School's credit system are required. Publication credit points can be found in the Doctoral School's operating regulations.

The Doctoral School supports the fulfilment of the prescribed publication requirements by providing opportunities for publication in its peer-reviewed journals (in Hungarian and English) and by covering the costs of participation in domestic and international conferences from faculty and departmental resources. (Our students are expected to give presentations in foreign languages at conferences held in Miskolc, such as the microCAD conference). We strive to use our research projects to cover the costs of publishing in prestigious journals and participating in international conferences.

We regularly organise Doctoral Forums to present the research results achieved, and our students also participate in nationally organised PhD conferences. In order to obtain a degree, students must meet the publication requirements of the programme, which take into account the specific characteristics of the field. The scientific level of the doctoral school is determined by the requirement to publish one's own results in peer-reviewed foreign-language journals (with an impact factor, if possible, or at least indexed by Scopus) related to the thesis topics.

3.7. Assessment of student progress

The annual review and evaluation of student progress is an important part of our quality assurance system. This is done in consultation with the supervisor, partly at the Doctoral School Research Seminars and partly at the Doctoral School Council meeting. Justifying any shortcomings identified during the review, analysing the reasons for these shortcomings, and eliminating and resolving the obstacles play an important role in ensuring student progress. Depending on the reasons identified during the evaluation, those who fail to perform well over two semesters will be expelled from the programme, but our primary goal is for as many students as possible to successfully defend their theses within the planned training period or shortly thereafter.

3.8. Degree award procedure

The degree awarding process is a crucial part of doctoral training. The conditions and requirements for submitting a thesis are set out in the Doctoral School's Rules of Procedure. Familiarising students with these requirements and helping them to meet the prescribed/expected publication requirements is an important element of quality assurance in the degree award procedure, as is ensuring that both students and their supervisors comply with scientific ethical standards. We hold an Information Day for students and supervisors every semester to discuss issues related to doctoral training and the degree awarding process.

The precise formulation of complex examination requirements, assistance with preparation, the composition of Complex Examination Committees in accordance with the regulations, and their demanding work are also part of the quality assurance of the degree awarding process. We attach great importance to openness in quality assurance, both in workplace discussions and in the organisation of defences. This includes ensuring that theses and dissertations are widely available before and after the defence. The thesis sent to the reviewers cannot be modified afterwards. If the Review Committee finds any professionally incorrect statements or rejects any thesis points, the relevant section of the committee's minutes will be attached to the dissertation (also in electronic form), and the defended thesis will be published with this addition (library, repository).

We publish regular and accurate information about the comprehensive examination, workplace discussions and defences on the School's website. Defended dissertations and their theses must be uploaded to the doktori.hu website.

3.9. Evaluation of the work of supervisors and lecturers

The fundamental prerequisite and guarantee of the high standard of doctoral training is the high-quality work of lecturers and supervisors, the maintenance of the material for the advertised courses, the submission of modifications, deletions and new additions, and their approval by the School Council.

Supervisors are responsible for regularly consulting with and guiding students in their doctoral research and dissertation preparation. Supervisors also play a role in ensuring the financial conditions for research (providing the background and equipment for experiments, access to IT equipment, etc.) through their institutes and departments.

Monitoring the regular publication activity of supervisors, involving supervised students in international and foreign conferences, holding joint lectures, sending students to foreign conferences, and encouraging joint lectures are all ways of ensuring that students' publication activity meets the expected standard. In addition, our supervisors utilise the international connections of the department and faculty to assist our students in obtaining short- or long-term professional study trips to partner institutions abroad. This activity includes inviting renowned foreign professors, expanding research collaborations, and increasing opportunities for partial training.

The Doctoral School Council regularly monitors the academic performance of lecturers and researchers working at the school and evaluates it on the basis of a developed system. The School

Council may expel those who perform inadequately from the School or relieve them of their supervisory duties.

3.10. General additional expectations

The work of the School can only be made complete and competitive through the joint efforts of teachers and students, international professional standards, knowledge of professional benchmarks, and a high level of compliance with these.

It is expected that the community of teachers and students will demonstrate their commitment to enhancing the value and international reputation of the highest level of university education through continuous self-monitoring and documentation of processes.

The School's work is characterised by openness, extensive consideration of feedback, and a focus on quality.

4. Closing remarks

The regulations aim to achieve the following quality assurance principles:

Professional control

The entire process of doctoral training and degree acquisition must be subject to scientific public control.

Public

The main phases of the quality assurance system should be widely publicised to the professional and scientific community.

Feedback

Lecturers, supervisors and members of various bodies of the doctoral school participating in doctoral training should receive continuous feedback on the quality of their work and have the opportunity to provide feedback on their experiences.

The principle of quality focus.

By establishing and operating a quality management system, we aim to ensure that both our students and lecturers continuously raise their standards in relation to themselves and their environment, while at the same time making humility towards science an integral part of their value system and initiative and creativity a cornerstone of their thinking.

The principle of intellectual property protection.

The development of the quality management system must also contribute to ensuring that doctoral training at the university continues to be fully in line with the efforts of the Republic of Hungary and the European Union to protect intellectual property.

Individual responsibility

It should be clearly defined who is responsible for what among those participating in doctoral programmes and why.

Documentation

All decisions relating to doctoral programmes and the awarding of degrees must be documented.

The laws, regulations and proposals used as background material:

[Act CCIV of 2011 on national higher education](#)

[Government Decree 387/2012 \(XII.19.\)](#)

https://www.enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf

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