BRNO UNIVERSITY OF TECHNOLOGY

EVALUATION OF RESEARCH, OTHER CREATIVE ACTIVITIES AND DOCTORAL STUDIES AT BUT 2024

Evaluation report

Doctoral studies

Recommended length: up to 5 pages including the cover page

Doctoral Study Programme:

Applied Mathematics

Evaluation panel members

	First and last name of the evaluator	Institution of the evaluator
1.	Roberto Fontana	Politecnico di Torino

Comment on the support and development of doctoral students, including recommendations for further development in this area:

PRELIMINARY REMARK
Regarding the evaluation report for the Doctoral Studies at IM, my primary observations are based on my recent visit to IM on November 5, 2024, at BUT. I also consulted the 2019–2023 Self-Evaluation Report as a supplementary source of information. I focused on the visit itself for more current insights. During the visit, I had the opportunity to meet privately with some PhD students.

Study in doctoral programs at the IM is conducted according to the Individual Study Plan (ISP) and is supervised by a supervisor. The study is conducted full-time or in a combined form. Each study program has a standard period of study (usually four years). The study is divided into two parts – the study part and the scientific part. The study part is intended mainly for the fulfillment of compulsory subjects given by the ISP and is concluded with the state doctoral examination. In the scientific part of the study, the student is primarily engaged in work on the dissertation. The PhD student participates in an internship at a selected foreign workplace. Full-time students are entitled to a doctoral scholarship for the standard duration of their studies. Every semester/year, a review of the study takes place, where the fulfillment of the doctoral student's obligations is evaluated by his/her supervisor and the departmental board. Successful completion of studies is represented by the defense of the dissertation before the departmental board.

The program board evaluates each PhD student every year, considers their progress, and decides if the student is allowed to continue. The achievements are commented on by the supervisor, the Head of the Institute, and the Head of the Program Board.

(i) PhD students are encouraged to conduct seminars in elementary mathematics, i.e., calculus, linear algebra, ODEs, and statistics. The seminars are part of the faculty study program in Mechanical Engineering.
(ii) PhD students benefit from vast international cooperation and participate on research within FME.
(iii) PHD students participate in international conferences.

Phd students appeared highly motivated. They appreciated the family-like working atmosphere. Some of them pointed out that some orientation from IM at the beginning of the doctoral studies would help them in their career. They were satisfied about their involvement in teaching.

Comment on the quality of supervisors in the given doctoral study program and the main criteria that supervisors should meet:

From the point of view of bibliometric indicators supervisors appear quite different. In general PhD students were happy concerning the availability of supervisors for discussing their work. They were also satisfied by the possibility that IM offers to those students that want to change research subject during their career.

Comment on the international dimension of the doctoral study program. Recommendations for further strengthening international cooperation and the interdisciplinarity of students' research activities:

(i) Each student has to visit a foreign institution for at least one continuous month. This includes Erasmus internships, commercial internships (Japan) and grant positions (Italy). Apart from that, each student has to attend at least two international conferences abroad and give an active presentation (not only a poster).
(ii) There are supervisors from abroad (Norway, Poland);
(iii) committee members and reviewers are sometimes chosen from abroad (Cambridge, Paris, Tokyo, Texas University);
(iv) there are foreign students (Spain, Italy, UK) for full studies and short term stays.

The international dimension looks quite good even if it not clear to me how many final dissertations are written in English. In my opinion all final dissertations should be written in English because in this way publication of papers extracted from the thesis would be facilitated. The number of Foreign other countries looks quite low (3 out of 37 as in the last row of the table "Total number of studies in academic year 2018-2023", p.34 of the Self-Evaluation report).

Recommendations for Further Development of the Program:

I did not have the possibility to assess the detailed list of topics that are covered by the Study Program but I understand that the research work of each student is entirely connected with the research carried on by IM. Another warranty of the quality of the Study program is the frequent participation of representatives from Masaryk University, Charles University, and foreign universities (e.g., Cambridge University, UK) in doctoral boards of the program. For this reason I have a positive impression on current study programs.
I agree with the proposed next steps following the SWOT analysis: PhD studies at IM are well established and personal background is solid. It is necessary to maintain international cooperation for students' motivation and to keep the internationally recognized level of science. It is also necessary to search for grant resources, especially with respect to the new system of PhD studies funding.
Possible improvements could come by the reinforcement of the collaboration with other Institutes of BUT and the active participation at European Committees and Consortia.