

## ANNEX 1

### **Joint management structure and joint mechanisms of the master's study programme "European Master of Particle physics and Accelerator Technologies for Research and Industry" (EMPATRI)**

European Master of Particle physics and Accelerator Technologies for Research and Industry (EMPATRI) study programme is designed and will be implemented and managed by a Consortium of higher education institutions (HEIs), from the three Baltic states, Latvia, Estonia, and Lithuania. At the present time, this Consortium comprises five HEIs: Riga Technical University (RTU), University of Latvia (UL), University of Tartu (UT), Kaunas University of Technology (KTU), and Vilnius University (VU).

#### **Joint management structure**

EMPATRI will be managed jointly by all partners of the Consortium via the **study programme council (SPC)**, which will act as the main overseeing body of the programme. SPC will consist of ten<sup>1</sup> council members, two from each HEI of the Consortium. SPC members will be delegated by the appropriate Representative of each member of the Consortium, as determined by the state and internal regulations applicable to the respective HEI. At the present time, these Representatives are: **Vice-Rector for Academic Affairs, Professor Elīna Gaile-Sarkane at RTU, Vice-Rector for Studies, Professor Kristīne Strada-Rozenberga at UL, Vice-Rector of Academic Affairs, Dr Aune Valk at UT, Vice-Rector for Education, Professor Kristina Ukvalbergienė at KTU, and Pro-Rector for Studies, Professor Valdas Jaskūnas at VU.** The initial term of the members of the SPC will be six years, with the option to be renewed for an indefinite number of terms. The Representatives of the HEIs will, however, retain the right to make changes to their SPC delegates at any time. The SPC will internally nominate and vote on the Chair and the Vice Chair positions of the council for the term of two years, with an option for renewal for a second term. The HEI of the Consortium holding the Chair position is also responsible for providing the secretariat services for the SPC, including but not limited to, the provision of the minuting of the SPC meetings. All decisions shall be taken by the SPC by a simple majority vote, provided a quorum of no less than six council members and at least one representative from each member of the Consortium. In case of a tied vote on any matter, the Chair or, in their absence, the Vice Chair of the SPC will hold the deciding vote.

The SPC is responsible for the strategic planning and the approval of the processes and outcomes of the study programme. Such processes and outcomes include, but are not limited to, the approval of the committees of the study programme, the study course plan, assignment of the academic staff, student admissions, matriculation and exmatriculation of students, and the exam and final grades. The SPC will meet regularly, with a minimum of no less than three meetings per year:

- Following the January exam period to evaluate the students' results.
- Following the June exam period to evaluate the students' results, prepare the final documentation required for graduation and to approve the annual committees for the following academic year.
- Following the close of the yearly application period, likely scheduled for May/June of each year.

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<sup>1</sup> Each member of the Consortium will delegate two persons to the SPC. In case of contraction or expansion of the Consortium, the number of council members will decrease or increase, respectively, with the SPC always having twice the number of members than the number of members of the Consortium.

The programme council may convene for an *ad hoc* meeting if requested by any member of the study programme council or if requested by the Dean of a faculty implementing the study programme at either of the partner institutions, or if requested by a Vice Rector or Rector of any of the universities of the Consortium.

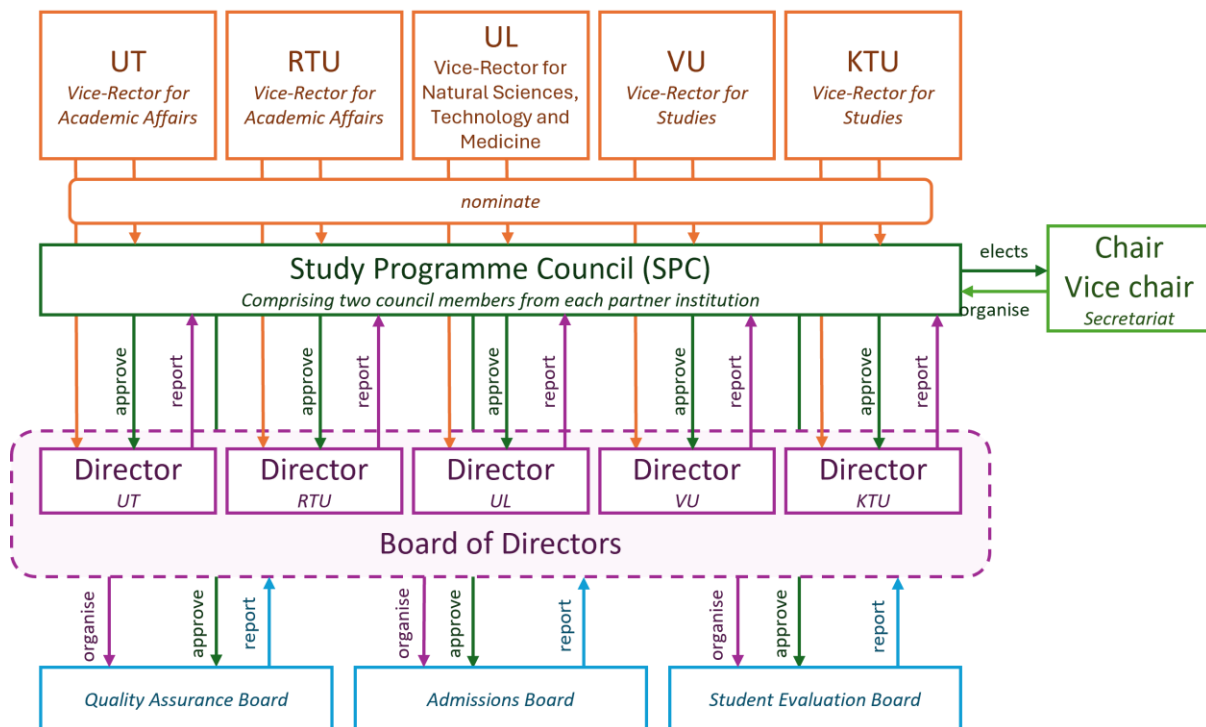


Figure 1. Organisational diagram depicting the joint management structure of the EMPATRI study programme.

The Representatives of each member of the consortium will also nominate a **study programme director (SPD)**. SPD nominees are approved or rejected by the SPC. In case of a rejection, the Representative of the HEI is required to provide an alternative nominee. The SPD may be designated from the two SPC members or be an *external* individual from the respective HEI of the Consortium. In case of the former, the corresponding SPC member shall recuse themselves from the approval process. SPDs participate in the SPC meetings, however, in cases where the SPD is an *external* participant, they do not hold any voting rights. SPDs approved by the SPC form the board of directors.

The board of directors is the main executive actor regarding the day-to-day activities of the study programme. It is responsible for ensuring the implementation of the study plan and the availability of the material and technical base necessary for the study process. It is also responsible for organising the annual committees and overseeing their work, as well as the creation and implementation of the annual communication, advertising, and dissemination plan. In addition, the board of directors act as the steering board of the programme, supporting the strategic planning activities of the SPC. The board of directors and each individual SPD report to the SPC and are bound by its decisions.

Several committees are formed annually for the study programme. The main bodies are the Quality Assurance Board, the Admissions Board, and the Student Evaluation Board. Each committee must consist of no less than one and no more than three representatives from each HEI of the Consortium. Both the members of the SPC and the board of directors are permitted to participate in the annual committees. Any individual is likewise permitted to participate in more than one annual committee.

The overall joint management structure is shown in Figure 1.

### **Joint admission mechanisms.**

The application evaluation and the ranking of students' applications prior to the admission out by the Admissions Board, validated by the board of directors and approved by the SPC. Prior to the evaluation of the received applications, SPC decides on the number of admissible students for the given intake and informs the board of directors and the Admissions Board. Students of EMPATRI will be enrolled simultaneously in all participating partner-universities.

### **Admission requirements.**

#### *General requirements.*

The applicant must have been awarded or is about to be awarded a **bachelor's degree** in **physics, mathematics, engineering, chemistry**, or other closely related field of science, with **at least 60%** of the acquired undergraduate **credits** having been awarded for courses in **physics, mathematics, engineering, chemistry** or other closely related field of science.

The applicant must be eligible to reside and study in the European Union or be eligible for an appropriate student visa.

#### *English language requirements.*

The applicant must be able to prove an English language comprehension level of at least B2 on the [Common European Framework of Reference \(CEFR\)](#) scale. The following documentation will be considered a valid proof of English language comprehension:

- International English Language Testing System (IELTS) score no lower than 5.5 in all categories;
- Internet-based Test of English as a Foreign Language (TOEFL iBT) score of no less than 75;
- A diploma of previous education where the predominant language of instruction was English;
- A proof of identity demonstrating that the applicant is a Native speaker of English from one of the following countries:
  - Australia;
  - The Bahamas;
  - Canada;
  - Ireland;
  - New Zealand;
  - St Vincent and the Grenadines;
  - United Kingdom;
  - United States of America.

### **Joint admission evaluation criteria.**

Student applications will be evaluated based on four main criteria:

- Interview (40% of the overall assessment).
- Letter of motivation (30% of the overall assessment).
- Academic results of their bachelor's studies (20% of the overall assessment).
- Curriculum Vitae and additional achievements (10% of the overall assessment).

Applicants must have achieved at least 60% of the overall maximum available marks for their bachelor's diploma and have passed no less than 90% (in terms of study credits) of individual courses/modules.

The letter of motivation must be no more than 3000 characters (including white-space characters). The letter should include a brief description of the applicant's previous study and work experience, scientific and research interests, and the reasons for choosing to apply for the EMPATRI programme. Additionally, the letter should include a brief discussion of the applicant's background and interests in general. The letter will be evaluated on the fit between the candidate and the study programme, as well as both the argumentation skills and the fluency of written English.

**NB!** Machine learning checking tools will be employed to evaluate the motivation letters and in case of the use of text-generation tools being detected, the letter will score 0%.

#### **Joint admission evaluation methodology.**

EMPATRI will have a regular yearly intake of students. Applications will be initially filtered with respect to the general admission criteria (see above) by two members of the Admissions Board nominated by the board of directors. The candidates whose applications are deemed invalid will be notified within seven calendar days from the closing date of the application period and given seven calendar days from the receipt of said notification to dispute and, if applicable, rectify the ineligibility factors of their application. The set of valid applications will be passed onto the full Admissions Board for further evaluation at the earliest opportunity.

The Admissions Board will evaluate the applications according to the joint admission evaluation criteria (see above). The applications will firstly be ranked with respect to the previous academic results of the applicants, from the highest to the lowest. At this stage the criteria of the total applicable credits and the total passed/failed credits described in the joint admission evaluation criteria section will be applied and applications failing these requirements will be excluded from further consideration. A predetermined number of highest-ranked candidates will be selected for an interview. The predetermined number will correspond to no less than 150% and no more than 200% of the available study places for the given year. In case of the total number of eligible applications being less than 150% of the available study places, all eligible applicants will be selected for an interview. Candidates selected for the interview will be notified at the earliest opportunity. Candidates not selected for interview will be notified concurrently.

The interview process will be conducted at the earliest possible opportunity for all selected candidates. During the interview, candidates will be asked to discuss their previous academic achievements, their academic and research interests, and the reasons for applying for the EMPATRI programme. Each individual interview will not exceed 30 minutes. The interviews will be carried out using a teleconferencing platform, such as Zoom or MS Teams. In case of unavailability of such tools to the candidate, best efforts will be made for the interview to be performed via other methods.

Following the interview process, the Admissions Board will provide the board of directors with the final ranking of the candidates for validation and to the SPC for approval at the earliest opportunity. For the final ranking, all four criteria listed in the joint admission evaluation criteria section will be assigned a mark from 0 to 10 (half-points will be permitted), weighted, and combined to provide an overall mark. In cases of equal overall mark, the position in the ranking will be assigned using the tie-breaking method by evaluating each of the separate marks in the following order of priority:

- 1) Interview.
- 2) Academic results of their bachelor's studies.
- 3) Letter of motivation.
- 4) Curriculum Vitae and additional achievements.

The individual marks for the letter of motivation, the interview and the Curriculum Vitae and additional achievements criteria will be constructed as described below.

*Letter of motivation [0-10 marks]:*

- 1) Motivation and research interests [0-5 marks]:
  - a. Motivation and research interests are ideally suited for the study programme, the letter conveys great enthusiasm for the programme [5 marks].
  - b. Motivation and research interests are well in-line with the study programme [4 marks].
  - c. Motivation and research interest are broadly compatible with the study programme [3 marks].
  - d. Motivation and research interest are tentatively connected and have only partial links with the study programme [2 marks].
  - e. Motivation and research interests are compatible with the relevant scientific field, but not directly compatible with the study programme [1 mark].
  - f. Motivation and research interests are wholly incompatible with the programme [0 marks].
- 2) Written argumentation skills [0-3 marks]:
  - a. The reasons for applying for EMPATRI are exceptionally clear and well justified [3 marks].
  - b. The reason for applying for EMPATRI is clear and reasonably justified [2 marks];
  - c. The reasoning for the application is not particularly clear, with some justification outlined [1 mark].
  - d. The reasons for applying for EMPATRI are not clear and no reasonable justification is given for the application [0 marks].
- 3) Written English skills [0-2 marks]:
  - a. The letter is very well laid out, easy to read and to follow; the candidate demonstrates an excellent command of written English [2 marks].
  - b. The letter is well written, the candidate demonstrates reasonable command of written English [1 mark].
  - c. The letter is poorly written and does not demonstrate a reasonable command of written English [0 marks].

*Interview [0-10 marks]:*

- 1) Self-presentation skills and compatibility with the study programme [0-4 marks]:
  - a. The candidate can present themselves excellently and they are able to reaffirm their motivation and describe their research interests clearly and with ease [4 marks].
  - b. The candidate presents themselves well and they can reaffirm their motivation and to describe their research interests accurately [3 marks].
  - c. The candidate presents themselves well, but they have some difficulty to fully reaffirm their motivation and to describe their research interests [2 marks].
  - d. The candidate has difficulty presenting themselves and/or they are not able to reaffirm their motivation and research interests [1 mark].
  - e. The candidate presents themselves poorly and/or they are unable to demonstrate sufficient motivation or sufficiently describe their research interests [0 marks].
- 2) Quality of answers to questions posed by the members of the Admissions Board [0-3 marks]:

- a. The candidate provides thorough and knowledgeable answers questions posed by the members of the Admissions Board [3 marks].
  - b. The candidate provides satisfactory answers to the questions posed by the members of the Admissions Board [2 marks].
  - c. The candidate is able to provide satisfactory questions to some, but not to all of the questions posed by the members of the Admissions Board [1 mark].
  - d. The candidate is unable to provide satisfactory answers to questions posed by the the members of the Admissions Board [0 marks].
- 3) Spoken English skills [0-3 marks]:
- a. The candidate demonstrates an excellent command of the spoken English language [3 marks].
  - b. The candidate demonstrates good command of the spoken English language [2 marks].
  - c. The candidate demonstrates the minimum sufficient command of the spoken English language to allow them to be able to partake in the EMPATRI programme [1 mark].
  - d. The candidate is unable to demonstrate sufficient command of the spoken English language [0 marks].

*Curriculum Vitae and additional achievements [0-10 marks]:*

- 1) Research experience and publications [0-5 marks] (marks are cumulative):
- a. The candidate has previous research experience, and they are an author/co-author of Q1 or Q2 level publications [1 mark per a Q1 and 0.5 marks per a Q2 publication, up to 3 marks].
  - b. The candidate has previous research experience and they have authored/co-authored a textbook on a relevant-to-EMPATRI scientific topic [2 marks]

or

the candidate has previous research experience and they have authored/co-authored study materials on a relevant-to-EMPATRI scientific topic [1 mark].

- 2) Extra-curricular activities [0-3 marks] (marks are cumulative):
- a. The candidate has a track-record of active participation in various extra-curricular activities, such as sports, arts or other notable fields/topics [1 mark].
  - b. The candidate has a track record of participating in the education of school pupils or earlier-year undergraduate students [1 mark].
  - c. The candidate has other significant extracurricular achievements or awards [1 mark].
- 3) Additional complementary skills [0-2 marks] (marks are cumulative):
- a. The candidate can communicate (at least CEFR A2) in a language other than English and their native language [1 mark].
  - b. The candidate has other demonstrable skill/-s which would be complementary to their studies in the EMPATRI programme [ 1mark].

The final ranking will be approved by the SPC, and the successful candidates extended an Unconditional Offer for a study place in the EMPATRI programme via an official electronic mail letter, signed by the Chair of the SPC, at the earliest opportunity.

### **Conditional offers and clearing.**

It is foreseen that a number of candidates still studying in their final year of bachelor's studies will apply for the master's studies in the EMPATRI programme. Such applications are permitted, provided that the candidate can demonstrate that they will be in possession of their full and official final results by no later than the 1<sup>st</sup> of August of the given year. Such candidates must submit the projected results of their final year of study, approved and signed by a member of personnel at their university, such as their personal tutor or the study programme director, which will be evaluated identically to the other eligible applications. In case of successful application, such candidates will be extended a Conditional Offer for a study place in the EMPATRI programme via an official electronic mail letter, signed by the Chair of the SPC, with the condition being the attainment of an overall bachelor's degree result as set by the Admissions Board of EMPATRI for the given candidate. Importantly, in the case of the candidate not attaining the results outlined in the Conditional offer, the Admissions Board will retain the right to reject the candidate without further discussions.

It is foreseen that a number of candidates will either reject the offer of a study place in EMPATRI or, in case of the conditional offers, not meet the conditions set by the Admissions Board. In such cases the next highest-ranked eligible candidate will be offered a study place via the process of clearing. This process will continue until the deadline date for admitting new students for the given academic year at any of the universities of the Consortium has passed, all study places in EMPATRI for the given academic year have been allocated, or if there are no more eligible candidates, whichever state is reached first.

### **Joint enrolment & study process mechanisms.**

Successful applicants will be enrolled as students simultaneously in all participating partner-universities, with the matriculation taking place at RTU, and will remain enrolled for studies continuously at all HEIs of the Consortium for the entire duration of their studies. EU, EEA and Swiss nationals, as well as permanent residency permit holders in any EU country will be automatically eligible for enrolment into EMPATRI. Admission for other applicants into EMPATRI will be subject to either having a valid visa or being eligible for obtaining a valid visa for studies in the EU. Visa eligibility checks, as well as acquisition of a valid visa to undertake studies in the Republic of Latvia will be assisted by the RTU International Academic Cooperation and Studies department<sup>2</sup>. Equivalent assistance will be provided by the University of Tartu and Vilnius University for Estonia and Lithuania, respectively. Students requiring visa will be issued a *sponsorship letter* for the obtainment of the visa, signed by the Chair of the SPC, as soon as they will have passed the selection by the Admissions Board and accepted the study place offered to them. The issue of such *sponsorship letters* will be coordinated by RTU and the secretariat of the SPC.

The students will be presented with the selection of available master's projects no later than the first week of study of the 3<sup>rd</sup> semester and will make their final selection of the master's project no later than week 8 of the 3<sup>rd</sup> semester of study. Following from the above, students will be eligible to undertake their 4<sup>th</sup> semester of study (master's project) in any of the universities of the Consortium.

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<sup>2</sup> <https://www.rtu.lv/en/university/structure-and-administration/departments/foreign-students-department>

### **Joint student evaluation and diploma award mechanisms.**

The student performance evaluation, including but not limited to the organisation of the marking of the exams and calculation of weighted grades, will be carried out by the Student Evaluation Board. This board will likewise be responsible for the recommendation of any student for graduation or exmatriculation. The evaluation of student performance carried out by the Student Evaluation Board will be validated by the board of directors and approved by the SPC.

### **Joint award of degree and diploma.**

Students, who successfully complete the EMPATRI study programme will be awarded a **single joint master's diploma in science** by the Consortium of all participating universities. The diploma will hold an equivalent legal status as the currently available separate master's diplomas in physics in each of the participating countries. The official title of the degree will be '*Master of Physical Sciences*' abbreviated as '*MSc*'. Where further specialisation title will be requested, the specialisation in '*high-energy particle physics instrumentation*' will be quoted. A standard joint diploma will be awarded for all successful graduates of EMPATRI, with no additional levels of distinction for high achievement. The Consortium reserves, however, the right to supplement the diploma with an internal, unofficial and separate award of distinction for the exceptionally performing students.

**NB!** At the time of writing the necessary legal framework at the governmental level for the award of the joint diploma discussed above has not yet been established. The Consortium has initiated a discussion with the policy makers in the Baltic States about the development of one single joint diploma for the graduates of EMPATRI. This discussion has been initiated via the pan-Baltic policy advisory body – the Baltic Assembly. There has been significant progress towards establishing the necessary legal framework to allow the Consortium to award one single joint diploma for the graduates of EMPATRI. As the award of a joint diploma is of critical importance, members of the Consortium will continue to lobby for the establishment of the required legal framework.

### **Joint study evaluation mechanisms.**

For the three taught semesters, comprising of a total of 90 ECTS, students will be evaluated on an overall 10-grade scale for each individual study course. The initial marking of each individual course will be done in accordance with the existing grading methodology at the university implementing a given course<sup>3</sup>. These grades will then be translated directly to the 10-grade scale shown below:

- Overall final grade 10 (pass);
- Overall final grade 9 (pass);
- Overall final grade 8 (pass);
- Overall final grade 7 (pass);
- Overall final grade 6 (pass);
- Overall final grade 5 (pass);
- Overall final grade 4 (fail);
- Overall final grade 3 (fail);

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<sup>3</sup> RTU:

[https://www.rtu.lv/writable/public\\_files/RTU\\_regulation\\_on\\_the\\_assessment\\_of\\_learning\\_outcomes.pdf](https://www.rtu.lv/writable/public_files/RTU_regulation_on_the_assessment_of_learning_outcomes.pdf).

UL: <https://www.lu.lv/en/admission/for-international-students/degree/academic-information/>.

UT: <https://ut.ee/en/courses-taught-english-and-grading>.

VU: <https://www.vu.lt/en/studies/exchange-students/credits-and-grading-system>.

KTU: <https://en.ktu.edu/studies/#student-achievement-assessment>.



- Overall final grade 2 (fail);
- Overall final grade 1 (fail).

For all taught courses, the overall percentage result will be the weighted average of all assessed parts of each study course. The choice of the weights of the final exam, coursework or any other valid form of assessment, will remain at the remit of the HEI implementing a given course. Award of grades for attendance are not permitted, however, attendance of the courses will be strictly monitored.

The evaluation of each individual study course will be the responsibility of the implementing HEI and will be provided to the SPC no later than 20 calendar days after the conclusion of the exam period when the final exam for the corresponding course takes place.

The exam period will take place twice a year, at the end of each study semester, usually during January (autumn semester) and June (spring semester).

The Student Evaluation Board will collate the final results, which will be validated by the board of directors and approved by the SPC. The grades distributed to the students no later than 10 calendar days after receiving all of the exam results from the corresponding exam period and no later than 30 calendar days after the conclusion of the corresponding exam period.

Any dispute of the results must be addressed in writing to the Chair of the SPC by the student no later than 10 calendar days after the receipt of the results. Any such dispute will be dealt with on an individual basis by the board of directors and the SPC, with a resolution (to accept or deny the item of dispute) being provided no later than 20 calendar days after the receipt of the respective complaint and no later than 60 days after the conclusion of the corresponding exam period. The methodology for resolving disputes for the EMPATRI study programme are described a later section.

### **Resits and exmatriculation.**

Students scoring less than 40% overall or less than 35% in modules/courses comprising of 15 ECTS (inclusive) or more in any single semester prior to any resits will be invited to a closed session of the Student Evaluation Board, where the viability of the continuation of their studies within the programme will be discussed. If given sufficient reassurance, the Student Evaluation Board may recommend continuation of the studies on a case-by-case basis.

Students failing to achieve a passing grade in any course will be given a chance to resit the exam and, if viable, redo the coursework for the given course. The first chance for the exam resit will be given within 10 calendar days of the original exam date, or within 5 calendar days after the last exam of the given exam period, whichever comes latest. The second chance to resit the exam for courses sat in semester 1 and semester 2 will be given during the inter-year summer. The second chance to resit the exam for courses sat in semester 3 will be given on a case-by-case basis, but no later than by the Easter holiday period of the given year. A chance to redo coursework from semester 1 and 2, if viable, will be given during the inter-year summer. Redoing of coursework from semester 3 will not be permitted.

Students who still receive an overall failing grade for any individual course following the second resit will be invited to an individual meeting with the Student Evaluation Board. Following the discussion a third chance for a resit may be awarded, where possible, with the maximum attainable grade capped at 40%. If an agreement is reached that the continuation of studies in EMPATRI programme is not viable, best efforts will be made to seek an alternative study programme for the student to join in one of the HEIs of the Consortium.

Students who do not complete or receive a failing grade for their master's project will not be eligible to graduate with the joint diploma awarded for the completion of the EMPATRI study programme. Additionally, redoing a full semester or a full year due to failing grades will not be permitted within the EMPATRI study programme. In cases, where this is deemed applicable and practicable, such students might be given an opportunity to transfer their credits to one of the HEIs of the Consortium to renew their pursuit of a master's degree in that given university.

### **Joint quality assurance and dispute resolution mechanisms.**

Study programme's quality assurance (QA), as well as conflict and dispute resolution will be handled by the Quality Assurance Board. This board will be tasked with a regular review of the QA methodology and processes, with any proposed change to the methodology vetted by the board of directors and approved by the SPC. Additionally, conflict and dispute resolution will fall under the remit of the Quality Assurance Board.

### **Dispute resolution.**

The Quality Assurance Board will act as students' first point of contact in case of them encountering any issues related to the study process. Any minor disagreements, adjustments, and requests, as well as any other type of minor dispute or complaint of a student, which does not significantly impact their studies, will be dealt with directly by the Quality Assurance Board. If deemed necessary, these will be elevated to the level of the board of directors and, if required, the SPC. Students will be fully informed about the methodology to be used for the resolution of such disputes or complaints.

Significant disputes will be dealt with according to well established rules of dispute and conflict resolution procedures at each institution of the Consortium. The choice of the applicable procedures shall be governed by the affiliation of the source of the respective grievance.