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QAFIN

METHODOLOGY FOR THE EVALUATION OF UNIVERSITIES FOR THE PURPOSE OF INSTITUTIONAL CLASSIFICATION AND RANKING OF DEGREE PROGRAMMES

Beneficiary: MINISTERUL EDUCAȚIEI ȘI CERCETĂRII

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METHODOLOGY FOR THE EVALUATION OF UNIVERSITIES FOR THE PURPOSE OF INSTITUTIONAL CLASSIFICATION AND RANKING OF DEGREE PROGRAMMES

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https://www.aracis.ro/rezultatele-proiectului-qafin/

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1 ABOUT THE QAFIN PROJECT

The project "**Improving public policy in higher education and increasing the quality of regulation by updating quality standards - QAFIN**" aims to increase the quality of regulation related to:

- quality evaluation in higher education;
- classification of universities and ranking of degree programmes offered by them.

The project's aim to implement evidence-based public policies by linking strategic planning with programme budgeting - is also achieved by improving the administrative capacity of the Romanian Agency for Quality Assurance in Higher Education (ARACIS) and the Ministry of Education and Research (MER), which involves:

- adaptation of structures;
- process optimisation;
- adequate training of human resources.

The QAFIN project is implemented by:

- ***Ministry of Education and Research, through the Externally Funded Projects Management Unit - MEN UMP,***

in partnership with:

- ***Romanian Agency for Quality Assurance in Higher Education -ARACIS,***

Subcontractor in the project:

- ***World Bank.***

The project is co-financed by the European Social Fund (ESF) through the Operational Programme Administrative Capacity 2014-2020, Priority Axis 1: Effective public administration and judiciary, Specific objective 1.1: Development and introduction of common systems and standards in public administration that optimise citizen and business-oriented decision-making processes in line with the Strategy for Strengthening Public Administration 2014-2020 (SCAP). Project activities are implemented with technical assistance from World Bank experts and the implementation period is **29 May 2017-29 January 2021**.

2 Specific project objectives

A. **For more efficient decisions on how to allocate funding to higher education institutions** and the study programmes they organise, under the QAFIN project:
   a. the necessary tools will be developed and provided, namely: **methodologies and guidelines for the external evaluation of the quality of higher education and for the ranking of higher education institutions and study programmes;**
   b. the **role and mandates** of **institutions involved in quality assurance processes in higher education**will be **clarified** .

   These will lead to optimised strategic planning and curriculum budgeting.

B. The **methodology and guidelines for classifying higher education institutions and ranking degree programmes will be implemented,** based on clear and transparent sets of indicators and data.

C. The **administrative capacity of the Ministry of Education and Research and the Romanian Agency for Quality Assurance in Higher Education will be improved at system level** by developing managerial tools for internal organisation and functioning (internal procedures, manuals, good practice guidelines), and by training the staff of both institutions and of higher education institutions in the implementation of the tools developed in the project and in European practices in the field.

3 QAFIN project results

Result 1. Development of the Methodology and Guidelines for External Quality Assessment in Higher Education in Romania.

1.1. Support the implementation of programme-based budgeting and develop tools for more efficient public spending by developing *the External Evaluation Methodology, benchmarks and performance indicators for external evaluation in higher education*.

1.2. Development of management tools through the development of guidelines and standards for implementation and assurance reporting based on the newly developed quality assurance methodology.

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1.3. Development and improvement of IT tools to support the application of the methodologies and procedures developed, including improvement of the ARACIS National Register of Assessors management system.

1.4. Piloting the new methodology and procedures developed and implementing a consultation mechanism between relevant stakeholders, as well as working with universities to identify innovative concepts.

1.5. Finalisation of the methodology and procedure guides and their approval by appropriate legislation.

1.6. Information and publicity.

1.7 Implementation of the horizontal principles *Sustainable Development, Equal Opportunities, Non-discrimination and Gender Equality*.

Result 2. Development of the Methodology for the evaluation of universities for the purpose of institutional classification and ranking of degree programmes.

2.1. Improving the methodology for evaluating higher education institutions for the purpose of ranking universities and ranking degree programmes.

2.2. Development of an IT module for data entry by universities, in accordance with the methodology, and the establishment of results on the evaluation of universities for the purpose of institutional classification and ranking of study programmes.

2.3. Piloting the new methodology and implementing a consultation mechanism between relevant stakeholders and working with universities to identify innovative concepts.

2.4. Completion of the methodology for the evaluation of universities for the purpose of institutional classification and ranking of degree programmes and approve it through an appropriate legislative instrument.

2.5. Implementation of the methodology for the evaluation of higher education institutions for the purpose of ranking universities and the ranking of degree programmes, and the preparation of the evaluation report.

2.6. Information and publicity.

2.7 Implementation of the horizontal principles *Sustainable Development, Equal Opportunities, Non-discrimination and Gender Equality*.

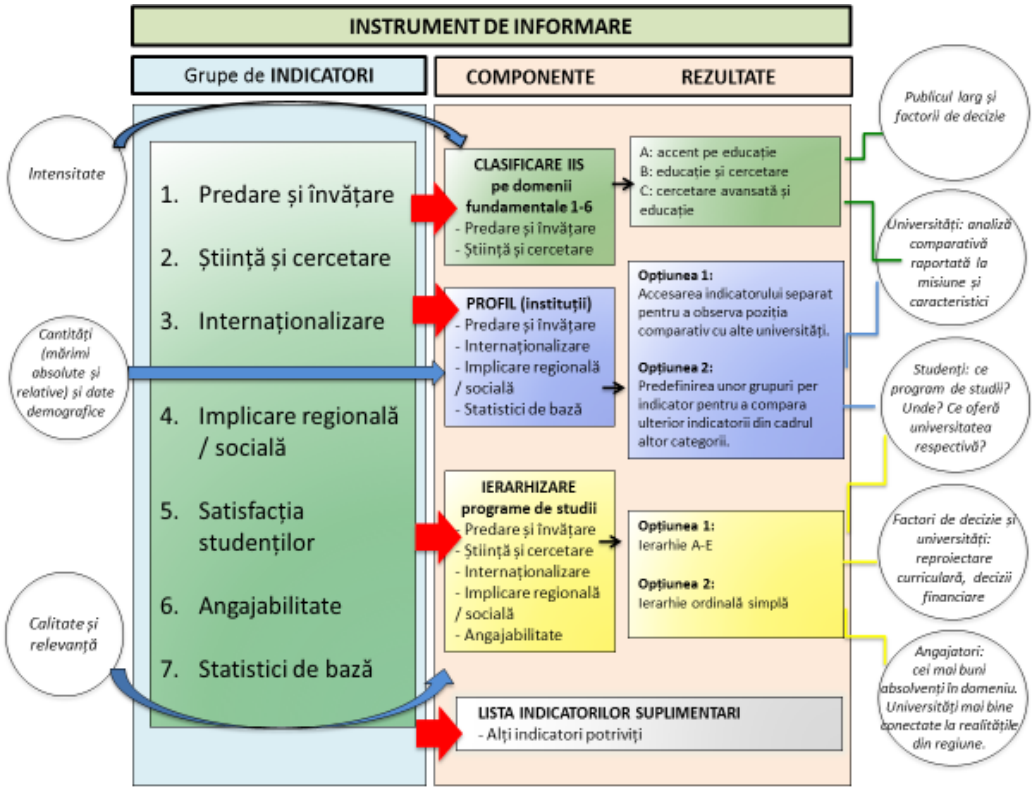


Figure 1 Dimensions, components and outcomes in the evaluation of the higher education system

Source: World Bank - QAFIN Project

Result 3. Study on data and good practice at European level on quality assurance and grading in higher education, and on the impact of current practices in this field at national level.

Develop a system study/analysis to identify and develop tools that will lead to the development of evidence-based policies in relation to quality assessment processes as well as ranking and classification.

Result 4. Updating of the ARACIS Organisational and Operational Rules and development of the Internal Procedures Handbook.

4.1. Develop a preliminary analysis to determine organisational needs.

4.2. Develop a complete and coherent internal procedures manual covering the work of ARACIS staff and experts.

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4.3. Revise the ARACIS Organisational and Functioning Regulations to improve management practices.

4.4. Implementation of the horizontal principles *Sustainable Development, Equal Opportunities, Non-discrimination and Gender Equality*.

Result 5. Development of the Manual of Procedures on the role and competences of the MEC and its subordinate councils, i.e. ARACIS, with regard to quality assurance, and how the two institutions work together.

5.1. Analysis of the role and competences of the two institutions in order to clarify and delimit their roles in the quality assurance and ranking and classification process.

5.2. Draw up a manual of procedures in order to establish the roles and competences of the two institutions and how to collaborate and share data.

Result 6. Training/informing the staff of the MEC and its subordinate councils (CNCS, CNADTCU, CNFIS), ARACIS and higher education institutions on the implementation of the methodologies developed, including to ensure adequate sustainability of the project.

6.1. Organise training sessions for MEC, ARACIS and higher education management staff on the implementation of the methodologies developed, including ensuring appropriate sustainability.

6.2. Organise information sessions for staff in higher education institutions on the implementation of the methodologies developed, including ensuring appropriate sustainability.

6.3. Information and publicity.

Result 7. Participation of MEC and ARACIS staff in the exchange of good practice with other quality assurance agencies in higher education listed in the European Quality Assurance Register (EQAR).

Within the project, public consultations were organised in the major university centres in the country, with the participation of all stakeholders: university representatives, business representatives, students, civil society representatives, as well as experts from the Ministry of National Education (MEN), the Romanian Agency for Quality Assurance in Higher Education

(ARACIS) of the project and the World Bank, a financial institution with international expertise that provided technical assistance to the project.

4 EVALUATION METHODOLOGY FOR THE PURPOSE OF CLASSIFYING HIGHER EDUCATION INSTITUTIONS AND RANKING BACHELOR'S DEGREE PROGRAMMES - DRAFT

1. General Provisions

Article 1.

(1) **Ensuring the quality of** higher education and university scientific research **is an obligation of each higher education institution** and a fundamental task of the Ministry of Education and Research, hereinafter referred to as MEC, in accordance with the provisions of Article 192 of the National Education Law No. 1/2011, as amended.

(2) The evaluation for the purpose of classifying universities and ranking university study programmes is carried out by the **Romanian Agency for Quality Assurance in Higher Education, hereinafter referred to as ARACIS,** in accordance with the provisions of Article 193 (5) of the National Education Law No. 1/2011, as amended.

Article 2.

As part of the evaluation process for the classification of universities and for the ranking of degree programmes, higher education institutions, hereinafter referred to as *universities*, carry out the following activities:

a) establishing and assuming its own mission, in relation to the general mission of higher education, as set out in Article 117 of Law no. 1/2011, with a view to classifying the university in question in one of the categories referred to in Article 193 (4) of the same Law;
b) conducting an internal evaluation against the criteria and indicators set out in this methodology.

Article 3.

(1) The criteria on which the evaluation is based for the ranking of universities and the ranking of study programmes are as follows:

a) Teaching-learning;
b) Scientific research;
c) Internationalisation;

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d) Regional and social involvement;
e) Knowledge transfer;
f) Student/graduate satisfaction.

(2) A set of indicators is associated with each criterion.

(3) The indicators used for the purpose of ranking universities are different from those used for the purpose of ranking degree programmes.

Article 4.

In order to achieve comparability of data, the principle of homogeneity is respected in the process of classifying universities and ranking university degree programmes.

Article 5.

The classification of universities and the ranking of degree programmes is carried out in line with international practice in higher education as well as with the Bologna Process recommendations on transparency, in order to provide a clear picture of the diversity of university provision.

2. Classification of universities

Article 6.

(1) Universities shall be classified on the basis of the assessment provided for in this methodology and in accordance with the provisions of paragraph 1. (4) 193 of the National Education Law No. 1/2011, as amended, in the following 3 categories:

a) education-centred universities;
b) universities of education and scientific research or universities of education and artistic creation/sports performance;
c) advanced research and education universities.

(2) In order to classify universities in the categories referred to in paragraph 1, a set of indicators shall be used to measure the range of activities of universities, combined with the criteria set out in Article 3(1) in order to highlight their diversity.

Article 7.

All accredited public, private and denominational universities participate in the ranking evaluation process.

Article 8.

(1) In order to ensure compliance with the principle of homogeneity, the process of classifying universities includes the stage of grouping universities by ***fundamental fields of classification,*** hereinafter referred to as **FcF**, established on the basis of the *Nomenclature of fields and programmes of university studies, fields and programmes of university studies accredited or provisionally authorised to operate*, approved annually by Government decision, in accordance with Article 138 of the National Education Law No. 1/2011, as amended. The list of core areas of classification is established by order of the Minister of Education and Research, on the proposal of ARACIS, in consultation with the National Council of Rectors.

(2) The grouping of universities by fundamental areas of classification is carried out, depending on the ***complexity of the university,*** on the basis of the *statistically significant* weight of the number of students enrolled in the year of evaluation, in all university cycles.

(3) A university operates in a ***FcF*** with a *statistically significant* weighting if at least 10% of the total number of enrolled students follow degree programmes classified in that FcF;

(4) Depending on the complexity of the institution and taking into account the diversity of the university offer, the following categories of **universities** are distinguished **:**

a) **homogeneous**, where the share of students in a single FcF is above 75% and below 10% in the other FcFs;
b) **heterogeneous with two statistically significant FcF**, where the share of students enrolled in those FcF is above 10%;
c) **heterogeneous with three to four statistically significant FcF**, where the share of students enrolled in those FcF is above 10%.

3. Assessment for the purpose of classifying universities

Article 9.

(1) The composite indicators proposed as part of the evaluation process for ranking universities by FcF are as follows:

a) Weight of PhD students;
b) External mobility of teaching staff and internationalisation of the university offer;
c) Doctoral leadership ability;

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d) Breakdown of income from and for scientific research/artistic creation/sports performance;
e) Results of research-development-innovation through projects;
f) Research results through publications;
g) Citation research impact results;
h) Results of the university's social involvement;
i) Results of knowledge transfer through patents;
j) University ranking in international rankings;
k) Teaching materials produced and used in the teaching-learning process;
l) Degree of diversity and development of the university offer;
m) Student/graduates satisfaction - *Questionnaire*.

(2) The data sources, definition and description of the indicators used in the evaluation process for the purpose of classifying universities are set out in *Annex I, Part I - Composite indicators used in the classification of universities*, an integral part of this Government Decision.

Article 10.

The evaluation process for ranking universities comprises the following steps:
a) Grouping of universities by fundamental areas of classification;
b) Establish the list of composite indicators used in the assessment year for the classifying of universities, from among the indicators set out in Article 9(1);
c) Setting the weights of composite indicators;
d) Centralisation and processing of data in the IT module implemented for data entry by universities, hereinafter referred to as the ***IT module***;
e) Teams verify data compliance through visits to universities;
f) Determination and normalisation of composite indicators on FcF;
g) Establishing the category: A, B and C on each FcF;
h) Classification of universities into the 3 categories - A, B and C, according to Article 193 (4) of the National Education Law No. 1/2011, as amended.

Article 11.

(1) List of indicators referred to in Article 9(1), their weights and *the Algorithm for processing and aggregating data for the classification of universities* are approved by order of the Minister of Education and

Research in the year of evaluation, on the proposal of ARACIS and in consultation with the National Council of Rectors.

(2) *The data processing and aggregation algorithm for the classification of universities*, as referred to in paragraph 1, shall be designed and implemented within the IT module.

Article 12.

(1) The computer module managed by ARACIS centralises and processes the data referred to in Article 9 (2) collected by the entities under the subordination/coordination of the MEC, in accordance with the provisions of this methodology.

(2) The data compliance verification phase is ongoing and is carried out by teams of evaluators through visits to universities. Universities are obliged to comply with Article 192 (2) and (3) of Law No. 1/2011 in the data entry and reporting process. At the proposal of ARACIS, MEC may decide to penalise, under the law, universities that have reported erroneous and/or incomplete data.

(3) The step of determining and normalising the composite indicators by FcF shall be carried out in accordance with the *Algorithm for processing and aggregating data for the classification of universities* set out in Article 11(1).

(4) Depending on the complexity of the universities, at the end of the stage provided for in Article 10 (1)(g), the universities are determined by categories A, B and C, by FcF.

(5) Based on the determination of the ***aggregate index per university***, the classification of universities into the 3 categories - A, B and C, according to Article 193 (4) of the National Education Law No. 1/2011, as amended.

Article 13.

The evaluation for the classification of universities is carried out every 5 years and the results of this evaluation are valid until the next evaluation.

4. Ranking of bachelor's degree programmes

Article 14.

The study programmes shall be ranked on the basis of the assessment carried out in accordance with this methodology and with the provisions of paragraph (3) of Article 193 of the National Education Law No. 1/2011, as amended.

Article 15.

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(1) A set of indicators shall be used for the ranking of bachelor's degree programmes to measure the degree to which the criteria set out in Article 3 (1) at bachelor's study programmes level.

(2) The process of ranking bachelor's degree programmes is completed with the creation of a ranking, in which each degree programme associated with the organising university is positioned within the ranking field.

Article 16.

All accredited or provisionally authorised bachelor's degree programmes in accredited or provisionally authorised state, private and denominational universities are included in the evaluation process for the purpose of ranking degree programmes.

Article 17.

(1) The ranking of the bachelor's degree programmes related to the bachelor's fields is carried out through the establishment of ***bachelor's ranking fields, hereinafter referred to as BRF***, based on *Nomenclature* do*of the fields and programmes of bachelor's studies, accredited or provisionally authorised to operate*, approved, annually by Government decision, in accordance with Article 138 of the National Education Law No. 1/2011, as amended. The list of ***bachelor's ranking fields*** - ***BRF*** is established by order of the Minister of Education and Research, on the proposal of ARACIS, in consultation with the National Council of Rectors.

(2) A bachelor's degree programme falls within a single field of study.

(3) In order to ensure comparability of results, bachelor's degree programmes with less than 8 active bachelor's degree programmes at the time of the evaluation are grouped together in a related degree programme, i.e. in the same field of science.

5. Assessment for the purpose of ranking bachelor's degree programmes

Article 18.

(1) The composite indicators proposed as part of the evaluation process for the ranking of bachelor's degree programmes by the bachelor's degree areas of ranking are:

a) Degree of competitiveness/attractiveness on admission;

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b) Degree of diversity and development of specialisation;
c) Ratio of students to tenured teaching and research staff;
d) Teaching resources developed for the teaching-learning process;
e) Degree of internationalisation;
f) International study and placement mobility rate;
g) Weight of students from socio-economically disadvantaged backgrounds;
h) Graduation rate score by class;
i) Graduation rate of students from disadvantaged categories, beneficiaries of scholarships from own funds;
j) Graduate employment rate;
k) Average earnings of graduates;
l) Rate of continuation of studies at master or residency level;
m) Internships supported by the institution;
n) Student/graduates satisfaction - *Questionnaire*.

(2) The data sources, definition and description of the indicators used in the evaluation process for the purpose of ranking bachelor's degree programmes are presented in *Annex I, Part II - Composite indicators used in the ranking of bachelor's degree programmes*, an integral part of this Government Decision.

Article 19.

The evaluation process for the ranking of bachelor's degree programmes comprises the following steps:

a) Grouping of bachelor's degree programmes by ***bachelor's ranking fields***;
b) Establishing the list of composite indicators used in the assessment year for the ranking of bachelor's degree programmes, among the indicators set out in Article 18(1);
c) Establishment of weights of composite indicators used in the ranking of bachelor's degree programmes;
d) Collection and centralisation of data in the IT module;
e) Verification of data compliance through visits to universities by teams of evaluators;
f) Determination and normalisation of composite indicators by ranking fields;
g) Determination of the aggregate index by bachelor's degree programmes;
h) Ranking of bachelor's degree programmes by ranking areas in a ranking, in descending order, by aggregate indicator level.

Article 20.

(1) List of indicators referred to in Article 18(1), their weights and *the Algorithm for processing and aggregating data for the ranking of bachelor's degree programmes* shall be approved by order of the Minister of Education and Research in the year of evaluation, on the proposal of ARACIS and in consultation with the National Council of Rectors.

(2) The data required for the calculation of the indicators referred to in Article 19 is collected at the level of each ranking license area;

(3) *The data processing and aggregation algorithm for the ranking of bachelor's degree programmes* provided for in paragraph (1) shall be designed and implemented within the IT module.

Article 21.

(1) The data compliance verification phase is ongoing and is carried out by teams of evaluators through visits to universities. Universities are obliged to comply with Article 192 (2) and (3) of Law No. 1/2011 in the data entry and reporting process. At the proposal of ARACIS, MEC may decide to penalise, under the law, universities that have reported erroneous and/or incomplete data.

(2) The step of determining and normalising the composite indicators, by bachelor's fields of study for ranking, is carried out in accordance with the *Algorithm for Processing and Aggregating Data for Ranking Bachelor's Degree Programmes*.

(3) After completion of the stage provided for in Article 19(1)(g), the aggregate index by bachelor's degree programme within each ranking bachelor's field shall be determined and presented in a ranking in descending order.

Article 22.

Evaluation for the purpose of ranking university degree programmes is carried out every 5 years.

6. Duties of the institutions involved

Article 23.

(1) The MEC informs universities of their obligations under this methodology.

(2) The MEC provides ARACIS access to the databases necessary for the classification of universities and the ranking of bachelor's degree programmes, held by the Executive Unit for the Financing of Higher Education, Research, Development and Innovation - UEFISCDI.

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(3) ARACIS provides universities with access to the IT module developed within the QAFIN project for the classification of universities and the ranking of bachelor's degree programmes.

Article 24.

The funds required for the implementation of the IT module, its operation and management services, as well as for the evaluation for the classification of universities and for the ranking of bachelor's degree programmes, are provided from the QAFIN Project funds during its implementation.

Article 25.

(1) In the evaluation process for classifying universities and ranking bachelor's degree programmes, ARACIS has the following tasks:

a) select the expert evaluators;
b) constitute the evaluation teams;
c) orders visits to universities by teams of expert evaluators to validate the correspondence between the data collected and the real situation in the universities.

(2) The results obtained in the process of classification of universities and ranking of bachelor's degree programmes are sent to the MEC for the issuance of the classification and ranking order.

Article 26.

(1) Universities are required to enter the data required for the evaluation of the classification of universities and the ranking of bachelor's degree programmes by the date set by the MEC, in accordance with the provisions of Article 192 (2)-(3) of Law 1/2011.

(2) During the visit of the expert teams, universities are required to make available and ensure access to the data sources of the indicators set out in this methodology.

(3) The management of each university assumes the correctness of the data by signing *the Data Centraliser generated by the computer module*.

(4) Only after the validation of *the Centralised Data Module generated by the IT module* by the university management, the IT system determines the Composite and Aggregated Indicators.

7. Information of public interest

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Article 27.

ARACIS is required to ensure the transparency of the evaluation process for the classification of universities and the ranking of bachelor's degree programmes by posting on its website data considered to be information of public interest.

8. Final Provisions

Article 28.

The results of the classification of universities and the ranking of bachelor's degree programmes are established by order of the Minister of Education and Research, which is published in the Official Journal of Romania, Part I.

Article 29. On the date of entry into force of this Government Decision, the provisions of GD 789/2011 are repealed.

ANNEX I

Part I- Composite indicators used in the classification of universities

Part II- Composite indicators used in the ranking of bachelor's degree programmes

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Annex I

5 PART I. COMPOSITE INDICATORS USED IN THE CLASSIFICATION OF UNIVERSITIES

Principles for classification:

1. The classification of universities is carried out at the level of higher education institutions accredited or authorised to operate provisionally, state and private.
2. The classification of universities is carried out grouped **by Fundamental Fields of Classification** on the basis of the *Nomenclature of fields and specialisations/programmes of university studies and the structure of higher education institutions,* approved annually by MEC, and according to the complexity of the institution (simple and comprehensive). The complexity of the institution is determined based on the proportion of students enrolled in the current year in all cycles of education by the Fundamental Fields of Classification (FcF).
3. Data on:
   a) number of students, teaching staff, scholarships awarded, mobilities, projects, graduates – refers to the academic year;
   b) revenues, expenses, publications, citations, international rankings, patents – refer to calendar year;
   c) The time of recording data in a) and b) is annually on **1 January.**
4. Centralisation and processing of primary data in order to obtain aggregated indicators is carried out in a computer module implemented for data entry by universities and MEC and ARACIS operators, in accordance with the methodology for determining indicators below:

Indicator	1.1 Weight of PhD students
Definition	Is the proportion of PhD students out of the total number of students enrolled in the ***Core Classification Areas*** (Bachelor's, Master's and PhD). The ratio is weighted superunitarily with the degree of coverage of doctoral fields organised by the institution out of the total existing in the GD.
Purpose	Directly, the indicator shows the development of the supply and training of specialists in the last cycle of university studies. A high value of the indicator indicates a high level of participation in the work of training future researchers, securing potential university teachers and developing knowledge through original scientific research.

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Calculation method	The ratio of the total number of doctoral students enrolled at the institution in a FF to the total number of students enrolled in bachelor, master and doctoral programmes at the institution from all forms of education (FTL, PTL and DL, as appropriate) in a FcF. The ratio is weighted superunitarily with the degree of coverage of doctoral fields organised by the institution out of the total existing in GD in FcF.
Symbol	$PSDP_j^{DF}$
Calculation formula	$PSDP_j^{DF} = \frac{1}{n}\sum_{i=1}^{n} \frac{St_{Di}^{DF}}{St_{Li}^{DF} + St_{Mi}^{DF} + St_{Di}^{DF}} \cdot (1 + \frac{NDD\ in\ Univ_t^{DF}}{NTDD\ in\ DF_t})$
Data required	St_{Di}^{DF} – *the total number of doctoral students enrolled at the institution in a FF in the year i;* $(St_{Li}^{DF} + St_{Mi}^{DF} + St_{Di}^{DF})$ – *total number of students enrolled in bachelor, master and doctoral programmes at the institution level in all forms of education (FTL, PTL and DL)* *Note: In the case of professions regulated at European level with a duration of 300 ECTS or 360 ECTS (medicine and architecture), the integrated cycle (bachelor+master) is considered.* $NDD\ in\ Univ_t^{DF}$ - *the number of existing doctoral fields in the university* $NTDD\ in\ DF_t$ - *the total number of existing doctoral fields in the Fundamental Field, according to the current GD.* *i – academic year* *n – total number of years reported* *j – classified fundamental field* t - current year of the evaluation
Time period	The last five academic years, including the reporting year, are taken into account.
Data sources	ANS database (validation at the level of the HEI)
Aggregation level	Level ***Fundamental Classification Field***
Interpretation	A high value of the indicator indicates a high level of access, continuity, participation and training of higher education graduates in the last academic cycle at the university and also the capacity of students to enter doctoral schools. No distinction is made between fee-paying and budget-paying

	students, nor between students who have completed their bachelor's or master's degree at the same or another institution.
Quality standards and limits	The indicator should be based on verifiable data on PhD students enrolled in FF.

Indicator	**1.2 External mobility of teaching staff and internationalisation of university provision**
Definition	It measures the intensity of exchange of experience carried out by full-time teaching and research staff in the institution at other educational institutions abroad (international mobility), as well as the share of bachelor's study programmes taught in international languages in the total bachelor's offer.
Purpose	Directly, the indicator allows to measure the intensity of international exchange of experience, the visibility of the university, the interconnection of the institution with the international academic system, and indirectly – the capacity of the institution for continuing education and the efficiency of the work of specific international relations departments.
Calculation method	The sum of the ratios of the number of full-time academic and research staff in the institution who participated in long or short-term international mobility in the last "n" years to the total number of academic and research staff in FF. The ratio is multiplied by the degree of internationalisation of bachelor's study programmes and aggregated by the share of posts held by foreign teachers.
Symbol	$MPDC_j^{DF}$
Calculation formula	$MPDC_j^{DF} = \frac{1}{n}\sum_{i=1}^{n} \frac{4 \cdot MPDEL_i + 2 \cdot MPDEM_i + 0{,}5 \cdot MPDES_i}{PD_i^{DF}} \cdot (1 + \frac{PS\ lb.str_t^{DF}}{PS_t^{DF}}) + \frac{Nr.PostCD_{Str.t}^{DF}}{Nr.Post\ Stat\ functii_t^{DF}}$ Note: *in the study programmes of: Modern Language and Literature + One Foreign Language; French/German/English Language and Literature; Translation and Interpreting, Applied Modern Languages (English, French, German) in FTL,* $PS\ lb.str_t^{DF} = 0$

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Data required	$\mathrm{MPDEL_i}$ – ***long-term*** *international mobility = number of full-time full time research and teaching staff* in the institution *who participated in external mobility of more than one month (more than 31 days inclusive) in year **i**, in the fundamental field of classification.* $\mathrm{MPDEM_i}$ – ***medium-term*** *international mobility = the number of full-time full time academic and research staff* in the institution *who participated in external mobility of more than one week but less than one month (between 8 and 30 days inclusive) in year **i**, in the fundamental field of classification.* $\mathrm{MPDES_i}$ – ***short-term*** *international mobility = number of full-time full time academic and research staff* in the institution *who participated in external mobility of up to one week (up to and including 7 days) in year **i**, in the fundamental field of classification.* PD_i^{DF} – *number of full time full professors and research staff employed in the institution who worked in the core area during the year **i**.* $PS\ lb.str_t^{DF}$ – *total number of active bachelor's degree programmes taught in foreign languages in the reporting year in the core area (excluding degree programmes taught only in national minority languages).* PS_t^{DF} – *total number of active bachelor's degree programmes in the reporting year in the core area.* $Nr.PostCD_{Str.t}^{DF}$ *- number of posts or fractions of posts occupied in the staffing table by teachers from abroad teaching in the institution in the academic year of the report in the fundamental field (including teachers from the Republic of Moldova).* *Note: If the hours of teaching/research work carried out by teachers from abroad were not provided for/standardised in the job descriptions, i.e. were additional work, they will be determined mathematically as a post or fraction of a post.* $Nr.Post\ Stat\ functii_t^{DF}$ *- the total number of jobs existing in the staff establishment plan in the academic year of the report, in the fundamental field.* ***i*** *– academic year* *n – total number of years reported* *t - academic year of reporting*

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	j – classified fundamental field
Time period	The last five academic years, including the reporting year, are taken into account.
Data sources	Higher Education Institution (HEI)/GD/ANS
Aggregation level	Fundamental field level
Interpretation	A high value of the indicator indicates a high degree of exchange of experience of full-time teaching and research staff in the institution in similar institutions abroad, a stronger interconnection of the institution with the international academic system and, at the same time, the efficiency of the work of the international relations departments. Reflects the institution's orientation towards internationalisation and/or international cooperation. The number of mobility is not counted, but the number of teaching and research staff who have been on external mobility.
Quality standards and limits	The indicator must be based on verifiable data on the mobility of teaching and research staff.

Indicator	**1.3 Doctoral leadership**
Definition	Is the proportion of PhD supervisors in the total number of full-time teaching and research staff in the institution in a given FF.
Purpose	Directly, the indicator allows to measure the scientific capacity to sustain the cycle of doctoral studies. Indirectly – institution oriented towards training and encouraging teaching and research staff to obtain the habilitation certificate and affiliation to a doctoral school. Encouraging institutions to seek Cycle III accreditation.
Calculation method	The ratio of the number of tenured academic and research staff in the institution with doctoral tenure in FF to the total number of full-time tenured academic and research staff in the institution in FF.
Symbol	CCD_j^{DF}
Calculation formula	$$CCD_j^{DF} = \frac{2 \cdot \overline{PDIDp}^{DF} + \overline{PDIDa}^{DF}}{\overline{PD}^{DF}} \cdot 100(\%)$$

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Data required	$\overline{PDIDp}^{DF}$ – *the average number of full-time tenured teaching and research staff in the institution, PhD supervisors, employed in the university's IODS evaluated in FF, during the period under review.* $\overline{PDIDa}^{DF}$ – *the average number of full time teaching and research staff in the institution, PhD supervisors, but with employment contract in the IODS of other universities in FF, during the period under review.* $\overline{PD}^{DF}$ – *average annual number of full-time tenured teaching and research staff in the institution in FF during the period under review (full-time equivalent).* *Note: The average number is determined as the simple arithmetic average of the annual number of full-time teaching and research staff* in the institution *working in the core area during the period under review.* *i – academic year* *n – total number of years reported* *j – classified fundamental field*
Time period	The last five academic years, including the reporting year, are taken into account.
Data sources	CNATDCU/HEI/MEC
Aggregation level	Fundamental field level
Interpretation	A high value of the indicator indicates a higher capacity of the institution to offer PhD studies in FF. The institution has a tradition in organising doctoral studies and is oriented towards encouraging teaching and research staff to obtain the habilitation certificate and to join a doctoral school.
Quality standards and limits	The indicator should be based on verifiable data on the number of full-time, tenured, research and doctoral faculty affiliated with the IODS of the institution under evaluation or affiliated with other IODSs.

Indicator	**1.4 Breakdown of revenue from and for scientific research/artistic creation/sports performance**
Definition	Represents the average level of income earned or/and allocated for scientific research/artistic creation/sports performance, per tenured professor, per FF.

Purpose	Directly, the indicator reflects the fact that the institution is oriented towards research-development-innovation, materialised through financial revenues. Indirectly – competitive institution in research-development-innovation by attracting funding sources for scientific research/artistic creation/sports performance.
Calculation method	The initial indicator is determined, at university level, as the average of the valid data of the last five calendar years, for the ratio between the amount of income from and for research/artistic creation projects[1] (including those funded/allocated from the university's own budget) and the total number of tenured staff in teaching or research positions in the university (according to the NCFIS).
Symbol	$VCDI_j^{DF}\%$
Calculation formula	$$VCDI_j^{DF}\% = \frac{1}{n}\sum_{i=1}^{n}\frac{VNC_i^{DF}}{PU_i^{DF}} \cdot 100$$ *Note: The distribution of income and tenured teaching staff by FF remains at the discretion of the university management* In the case of comprehensive universities, for verification: $$\sum_{j=1}^{k} VNC_j^{DF} = VNC^U \quad \text{and}$$ $$\sum_{j=1}^{k} PU_j^{DF} = PU^U$$
Data required	VNC_j^{DF} – *the amount of annual income from research-development-innovation, artistic creation and sports performance activities (including those funded from the university's own budget), in the fundamental field of classification j.* VNC^U – *the total amount of the annual income from research and development, innovation, artistic creation and sports performance activities (including those funded from the university's own budget).* PU_j^{DF} - *is the total number of persons holding teaching or research posts in the fundamental field of classification j.*

[1] POSDRU, POS-CCE, POCU and POCA projects are not taken into account.

	PU^U - *is the total number of full time teaching and research staff in the institution.* *i – calendar year* *j – fundamental field of classification* *k – total number of Core Classification Areas* *n – total number of years reported*
Time period	The last five calendar years are taken into account. Data recorded on **1 January** are reported.
Data sources	Institutional reporting and/or official public sources – FOREXEBUG, CNFIS.
Aggregation level	Fundamental Field Level Classification and Institutional Level
Interpretation	A high value of the indicator indicates a high degree of funding obtained as a result of the implementation of R&D&I projects in a FF. Institution oriented towards research-development-innovation and organisation of scientific/cultural/sporting events.
Quality standards and limits	The indicator should be based on verifiable data on income from research, development and innovation, artistic creation and sports performance

Indicator	**1.5 Results of research-development-innovation through projects**
Definition	It represents the intensity of research and development, innovation, artistic creation and sports performance at the level of the institution in a given FF.
Purpose	Directly, the indicator reflects the fact that the institution is oriented towards research-development-innovation, sports performance, materialised through projects won through national and/or international competition, through non-competitive/predefined projects, respectively through sports performances at national and/or international level. Indirectly – competitive institution in research-development-innovation, in sports performance.
Calculation method	Ratio of the number of research projects won through national and/or international competition, number of non-competitive/predefined projects, number of national and/or international sports performances implemented in the university in the last 5 years, per full-time tenured and research faculty.

Symbol	$RCDP^{DF}$
Calculation formula	University level: $RCDP^{U} = \frac{4\sum_{i=1}^{n} Nr.Pr.cer.inter._i^{U} + 2\sum_{i=1}^{n} Nr.Pr.cer.naț._i^{U} + \sum_{i=1}^{n} Nr.Pr.terți_i^{U}}{\overline{PD}^{U}}$ At the level of Fundamental Fields: *For comprehensive universities, the distribution of the indicator by FF **will be automatically operated by the IT platform** on the basis of the share of R&D&I revenues by FF (see Indicator 1.4)*, as follows: $RCDP^{DF} = RCDP^{U} \cdot \frac{\sum_{i=1}^{n} VNC_i^{DF}}{\sum_{i=1}^{n} VNC_i^{U}}$
Data required	$Nr.Pr.cer.inter._i^{U}$ – the *number of research-development-innovation projects implemented as beneficiary or partner, won through international competition and/or the number of sports performances achieved at international level.* $Nr.Pr.cer.naț._i^{U}$ –*number of research projects implemented as beneficiary or partner, won through national competition (worth at least €10,000/project)* $Nr.Pr.terți_i^{U}$ – *National* and/or international*research-development-innovation projects* , including non-competitive/pre-defined, *concluded with third parties, implemented in the university (minimum value of €1000/project).* $\overline{PD}^{U}$ - the *average annual number of full-time tenured teaching and research staff in the institution, this is determined as the arithmetic average of the annual number of full-time tenured teaching and research staff* in the institution *who worked during the period under review.* *i – academic year* *n – total number of years reported* *In the case of the **Architecture and Urbanism** branch of science , specific projects are taken into account, according to the current standards and criteria of the CNATDCU.*

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	*In the case of FF 30 **Biological and Biomedical Sciences**, projects specific to the field are taken into account, according to the current standards and criteria of the CNATDCU.* *For FF 60 **Sport Science and Physical Education:*** $Nr.Pr.cer.naț._i^U$ *- number of research, development and innovation projects implemented as beneficiary or partner, won through national competition and/or the number of sports performances achieved at national level.* The performances of athletes trained by the university's teaching staff will be taken into account if they obtain at the JO, CM, JMU - places 1-5, and at the CE, CN - place 1 (according to MEN Order no. 6129 annex)/2016 on the *Minimum required and mandatory standards for the award of teaching titles in higher education and professional research and development degrees*), as well as at university championships (tournament - final phase) places 1-3, national championships (tournament - final phase) places 2-3, European championships places 2-6, other international sports competitions places 1-3, world competitions (World Games, Special Olympics, Paralympic Games, Olympic Games) - places 1-8 (according to OM 3128/2019, Annex 5.2. *Sports performance*).
Time period	The last five academic years, including the reporting year, are taken into account.
Data sources	Institutional reporting and/or official public sources
Aggregation level	Fundamental Field Level Classification and Institutional Level
Interpretation	A high value of the indicator shows a high degree of fundraising for research-development-innovation projects in the university and FF, respectively a high capacity to achieve sports performances. Institution oriented towards research-development-innovation towards sports performances and organisation of scientific/cultural events.
Quality standards and limits	The indicator should be based on verifiable data on the number of R&D, innovation, artistic creation and sports performance projects.

Indicator	1.6 Research results through publications
Definition	Is the intensity of involvement and professional capacity of full-time teaching and research staff in the institution to produce significant and recognised scientific publications in the fundamental field in which they work.
Purpose	This indicator measures the ability of teaching staff to produce significant and recognised research outputs (scientific publications) in a given FF.
Calculation method	The ratio between the sum of the scores of scientific publications in journals indexed by *Web of Science_Clarivate and Scopus*, proceedings indexed by Web of Science_Clarivate, as well as in recognized databases for each FF, mentioned in the annex MEN Order no.6129/2016 on the *Minimum required and mandatory standards for the conferral of teaching titles in higher education and professional research-development degrees*, and the average number of full time teaching and research staff in the fundamental field, for the last 5 calendar years.
Symbol	RCP^{DF}
Calculation formula	$$RCP^{DF} = \frac{\sum_{i=1}^{n} SPubWOB_{PD_i}^{DF} + \sum_{i=1}^{n} SPubBD_{PD_i}^{DF}}{\overline{PD}^{DF}}$$ $$unde: SPubWOB_{PD_i}^{DF} = \sum_{k=1}^{n} cp_k \times fi_k$$ $$SPubBD_{PD_i}^{DF} = 0{,}1 \sum_{k=1}^{n} cp_k$$
Data required	$SPubWOB_{PD_i}^{DF}$ – *Scientific publication score in Web of Science_Clarivate and Scopus indexed journals of authors working in the respective fundamental field, affiliated to the institution in the calendar year **i**.* $SPubBD_{PD_i}^{DF}$ - *The score of scientific publications (in Web of Science_Clarivate indexed journals, without impact factor, in Web of Science_Clarivate indexed proceedings and in BDI indexed journals) of authors working in the respective fundamental field, affiliated to the institution in calendar year **i**.*

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	cp_k – *the share of the article in question that belongs to authors in the fundamental field of the university concerned. For example, if an article published in a Web of Science indexed journal has three authors, two of whom are working in the core area of the university in question, then the share will be 2/3. If the article has 4 authors, one of which is from that university, then the share after affiliation will be 1/4.* fi_k – *the impact factor of the journal indexed in Web of Science_Clarivate, from the year of publication; for articles published in Scopus indexed journals the impact factor will be equal to 0.1 for all articles and all journals;* $\overline{PD}^{DF}$ – the *average annual number of full-time tenured teaching and research staff* in the institution *working in the relevant core area.* *i – calendar year* *n – total number of years reported* *k – author* *NOTE: a) If an article is indexed in more than one database, it will be considered for each database separately.* *b) If the publication has authors from different affiliations, the score is divided by the number of affiliations.* For example, an article published by two authors in collaboration (only one of whom has a declared affiliation to the evaluated university in the fundamental field in question) in a Clarivate Web of Science indexed journal with an impact factor equal to 1, will be counted in the numerator of the relationship by 0.5 x 1, i.e. 0.5 points. *In the case of the branch of science **Architecture and Urbanism**, the databases specific to the field are taken into account, according to the standards and criteria in force of the CNATDCU.* *In the case of FF 30 **Biological and Biomedical Sciences**, field-specific databases are taken into account, according to the current standards and criteria of the CNATDCU.*
Time period	The last five academic years, including the reporting year, are taken into account.

Data sources	Institutional reporting or direct collection from the mentioned databases (Centraliser 1.6).
Aggregation level	Fundamental field level
Interpretation	A high level of the indicator indicates a recognition of the research output of full-time academic and research staff working in a given FF. The teaching staff is oriented towards R&D&I.
Quality standards and limits	The indicator must be based on verifiable data, which can be found in the databases considered for the period in question.

Indicator	**1.7 Citation research impact results**
Definition	It represents the visibility and recognition of the research activity through scientific publications of the teaching and research staff tenured in the institution in the fundamental field under evaluation.
Purpose	This indicator measures professional visibility in the field of research as a result of the publication of scientific papers in a given FF.
Calculation method	The citations in scientific publications (in journals indexed *Web of Science_Clarivate*, *Scopus*, as well as BDI, recognized for each FF, in the annex MEN Order no.6129/2016 on the *Minimum required and mandatory standards for conferring teaching titles in higher education and professional degrees in research and development*)are summed up and divided by the average number of teaching and research staff with basic teaching in the fundamental field, for the last 5 calendar years preceding the reporting year. Scientific papers published by authors with a declared affiliation to the fundamental field and the respective institution are taken into account.
Symbol	RIC^{DF}
Calculation formula	$$RIC^{DF} = \frac{2\sum_{i=1}^{m} CitWOB_{PD_i}^{DF} + \sum_{i=1}^{m} CitBDI_{PD_i}^{DF}}{\overline{PD}^{DF}}$$
Data required	$\mathrm{CitWOB}_{\mathrm{PD_i}}^{\mathrm{DF}}$ - *Citations in scientific papers published in journals indexed in Web of Science_Clarivate and Scopus of authors with declared affiliation to the fundamental field in the respective university in year i.*

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	$CitBDI_{PD_i}^{DF}$ - *Citations in scientific papers (published in journals indexed Web of Science_Clarivated without impact factor and in BDI publications) of authors with declared affiliation to the fundamental field in the respective university in year i.* $\overline{PD}^{DF}$ – the *average annual number of full-time tenured teaching and research staff* in the institution *who have worked in the last 5 years in the core area. It is determined as the simple arithmetic average over 5 years of the annual number of full-time teaching and research staff* in the institution *who worked in the core area during the period under review.* *m – total number of citations* *NOTE: If the publication has authors from different affiliations, the score is divided by the number of affiliations.* *In the case of the branch of science Architecture and Urbanism, the databases specific to the field are taken into account, according to the standards and criteria in force of the CNATDCU.* *In the case of FF 30 Biological and Biomedical Sciences, field-specific databases are taken into account, according to the current standards and criteria of the CNATDCU.*
Time period	The last five academic years, including the reporting year, are taken into account.
Data sources	Institutional reporting or directly from *Web of Science_Clarivate* and *Scopus* databases.
Aggregation level	Fundamental field level
Interpretation	A high value of the indicator indicates a high degree of recognition of the publishing activity of teaching and research staff working in the FF. Research-development-innovation oriented teaching staff.
Quality standards and limits	The indicator must be based on verifiable data, which can be found in the databases considered for the period in question.

Indicator	**1.8 Results of the university's social involvement**
Definition	Is the intensity and capacity of the institution, i.e. of the full-time teaching and research staff in the institution and of the

	students in the valorisation of research, innovation and knowledge transfer, cultural and/or sports activities, in the fundamental field with social impact.
Purpose	This indicator aims to measure in a direct and objective way part of the impact that scientific research, knowledge transfer and voluntary activities carried out by teachers and students have on the socio-economic environment. Follow the social involvement of the higher education institution, i.e. teachers and students by: (1) organisation of national and international scientific conferences; (2) cultural and/or sporting activities organised by the higher education institution; (3) voluntary activities organised by the higher education institution; (4) the granting of scholarships/social assistance.
Calculation method	It is calculated as an aggregate indicator from the partial indicators and the weights for each.
Symbol	RI^{DF}
Calculation formula	Partial indicators 1. National and international academic and research conferences *(organised by the university)*: $$RI^{DF}_{ConferințePD} = \frac{0{,}3\sum_{i=1}^{n} PartCNN + 0{,}7 \cdot \sum_{i=1}^{n} PartCNI}{\overline{PD}^{DF}}$$ 2. Student scientific conferences: $$RI^{DF}_{ConferințeST} = \frac{\sum_{i=1}^{n} PartConf.St_i}{St^{DF}_{Lt} + St^{DF}_{Mt} + St^{DF}_{Dt}}$$ 3. Professional, cultural and/or sporting activities organised by the university and/or in partnership: $$RI^{DF}_{Prof/Cult/Sport} = \frac{\sum_{i=1}^{n} Nr.Act.prof_i + \sum_{i=1}^{n} Nr.Cult_i + \sum_{i=1}^{n} Nr.Sport_i}{St^{DF}_{Lt} + St^{DF}_{Mt} + St^{DF}_{Dt}}$$ 4. Voluntary activities organised by the university: $$RI^{DF}_{VoluntarST} = \frac{\sum_{i=1}^{n} Part.Vol.ST_i}{St^{DF}_{Lt} + St^{DF}_{Mt} + St^{DF}_{Dt}}$$

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5. Providing scholarships from own sources for students:

According to NCFIS IC4.2 **University contribution to the scholarship fund**.
It is calculated, at the level of the fundamental field, as the average of validated data for the last 5 academic years, for the ratio between the amount allocated by the university, from its own sources, for the scholarship fund (excluding budgetary sources) and the total number of students in all study cycles.

$$RI^{DF}_{Burse\ proprii} = \frac{\sum_{i=1}^{n} ChBurse\ surse\ proprii_i^{DF}}{\sum_{i=1}^{n} St^{DF}_{Lt} + St^{DF}_{Mt} + St^{DF}_{Dt}}$$

Aggregate indicator on the ***University's Social Engagement Outcomes:***

$$RI^{DF}_{A} = \frac{\sum_{x=1}^{5} RI^{DF}_{x} \cdot p_x}{100\ \%}$$

Aggregate indicator structure:

No.	Partial indicators RI^{DF}_{x}	Wright p_x %
1	$RI^{DF}_{ConferințePD}$ – organisation of national and international conferences of teaching and research staff	30
2	$RI^{DF}_{ConferințeST}$ – organisation of student scientific conferences	15
3	$RI^{DF}_{Prof/Cult/Sport}$ – Professional, cultural and/or sporting activities organised by the university and/or in partnership	15
4	$RI^{DF}_{VoluntarST}$ – volunteer activities organised by the university	10
5	$RI^{DF}_{burse\ proprii}$ – providing scholarships from own sources for students	30
	Total	100%

Data required	$St^{DF}_{Li} + St^{DF}_{Mi} + St^{DF}_{Di}$ – *the total number of students enrolled in bachelor, master and doctoral degree*

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	programmes at FF level in all forms of education (FTL, PTL, DL) in the reporting year; $\overline{PD}^{DF}$ *– Average annual number of full-time tenured teaching and research staff* in the institution *working in the core area during the period under review;* $Part.CNN^{DF}$ *– annual number of participants with papers presented and/or published at national conferences organised by the university (regardless of their origin);* $Part.CNI^{DF}$ *– annual number of participants with papers presented and/or published at international conferences organised by the university (regardless of their origin);* $Part.Conf.ST$ *– annual number of participants with papers presented at student conferences organised by the university;* $Nr.act.prof.$*– the annual number of professional activities implemented/included in the annual plan of scientific, cultural and sporting events organised by the university;* $Nr.Cult.$*– the annual number of cultural activities implemented/included in the annual plan of scientific, cultural and sporting events organised by the university.* *Note: In the case of cultural and sporting activities that have not been foreseen in the "Annual Plan of Scientific, Cultural and Sporting Events Organised by the University", the institutions will provide evidence of their organisation (flyers, announcements, public announcements, etc.).* $Nr.Sport.$*–the annual number of sports activities implemented/included in the annual plan of scientific, cultural and sports events organised by the university;* $Part.Vol.$*– annual number of participants with volunteer contracts and/or certificate issued by the institution;* $ChBurse_i^{DF}$- Expenditure on scholarships and other forms of financial support for students, from the university's

	own sources, other own souorces than budget allocations, by FF of classification (in RON); *NOTE: If a student has benefited from the social grant in both semesters, it is quantified twice in that academic year.* *Time of registration: the end of the academic year by cumulating the social grants of the two semesters.* *i – calendar year / academic year* *n – total number of years reported* *x – partial indicators* *t – reporting year*
Time period	Last five calendar/academic years.
Data sources	Institutional reporting
Aggregation level	Fundamental field level
Interpretation	This indicator aims to measure in a direct and objective way part of the social impact of scientific research and knowledge transfer, as well as student volunteering in the real economy and society.
Quality standards and limits	The indicator must be based on verifiable data, which can be found in the data sources considered for the period considered.

Indicator	**1.9 Results of knowledge transfer through patents**
Definition	Is the intensity and capacity of the institution, the full-time teaching and research staff in the institution and the doctoral students in the valorisation of research, innovation and knowledge transfer, cultural and/or sports activities in the fundamental field with regional and social impact.
Purpose	This indicator aims to measure in a direct and objective way part of the impact that applied scientific research and knowledge transfer has on the regional socio-economic environment.
Calculation method	It is calculated as the ratio of the total number of patents registered with OSIM or other equivalent foreign institutions to the total number of full-time academic and research staff in the institution per FF.
Symbol	$RTC_{Brevete}^{DF}$
Calculation formula	$RTC_{Brevete}^{DF} = \frac{1}{n}\sum_{i=1}^{n} \frac{3 \cdot BVA_i^{DF} + 0{,}5 * BVRI_i^{DF} + 1{,}5 * BVRSt_i^{DF}}{PD_i^{DF}}$

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Data required	BVA_i^{DF} – *total number of patents granted and issued by OSIM or equivalent foreign institutions, in FF, transferred to industry and/or the socio-economic environment (with evidence).* $BVRI_i^{DF}$ – *total number of domestic patents granted and issued by OSIM in FF.* $BVRSt_i^{DF}$ – *total number of foreign patents granted and issued by foreign approved institutions (excluding the Republic of Moldova and Ukraine) in FF.* PD_i^{DF} – *the number of full-time tenured teaching and research staff in the institution who worked in the core area in the year **i** (equivalent to one full teaching day).* *i – calendar year* *n – total number of years reported* NOTE: 1. *In the case of universities in the arts and architecture, report approved patents and copyrighted works in any artistic field.* 2. *For the fundamental area **Sport science and physical education**, we report on specialist publications (strategies, methodologies, methodological guidelines, training plans, sports training/rehabilitation/rehabilitation/motor and functional training programmes for children/young people/adults, for obtaining and maintaining health, maintaining the active life of the elderly), produced at the request of specialist bodies, representative at national and international level. Honorary titles are also reported - coach emeritus, master of sport, master of sport emeritus, national and international referee, commissioner, sports observer.*
Time period	Last five calendar years
Data sources	Institutional reporting and/or OSIM (State Office for Inventions and Trademarks).
Aggregation level	Fundamental field level
Interpretation	This indicator aims to measure in a direct and objective way part of the social impact of applied scientific research on the economy and society.

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Quality standards and limits	The indicator must be based on verifiable data, which can be found in the data sources considered for the period considered.

Indicator	**1.10 University ranking in international rankings**
Definition	Is the relative score of all appearances in international rankings.
Purpose	This indicator measures the prestige of the institution at global/international level.
Calculation method	The sum of the relative positions of the university in international rankings over the last 5 years.
Symbol	$PPCI$
Calculation formula	**By institution** $$PPCI = \sum_{i=1}^{n} \sum_{j=1}^{x} \frac{n_{Cij} - p_{Cij}}{n_{Cij}}$$ NOTE: If the university has more than one ranking in the same international ranking (physics, chemistry, etc.), all existing rankings are taken into account/calculated. **Breakdown by FF:** *For comprehensive institutions, the value of the indicator obtained per university is assigned as a constant across all core areas related to the HEI.*
Data required	n_{Cj} *– the maximum annual number of participants in the ranking or the maximum number of possible intervals in the ranking, determined according to the size of the interval and the amplitude of the variation (as per Annex 1.)* p_{Cj} *– the annual position of the university in the international ranking and/or the number of intervals in which the university is ranked.* *Note: If the ranking is done biannually, the last position of the calendar year is taken into account.* *Cj – international ranking considered* *x –number of appearances in the rankings in which the university appears in the reporting year* *i - year of registration* *n - number of years (last 5 years)*
Time period	Last *five calendar years*
Data sources	Institutional reporting. Centraliser 1.10

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Aggregation level	Institution level
Interpretation	A high value of the indicator indicates a high international prestige of the institution.
Quality standards and limits	The indicator should only be based on data published by institutions that produce international rankings.

Annex 1. List of International University Rankings

No.	Ranking system (acronym)	Initiated in	Supporting organisation	Indicators:	No. of participants	Weights %
1	Academic Ranking of World Universities (Shanghai)	2003	Shanghai Ranking Consultancy	6	500	20%
2	Center for World University Ranking (CWUR)	2012	Center for World University Rankings	8	1,000	5%
3	Leiden Ranking (Leiden)	2011	Leiden University, Netherlands	18	842	5%
4	QS World University Ranking (QSWorld)	2013	Quacquarelli Symonds Limited	6	916	15%
5	Round University Ranking (RUR)	2010	RUR Ranking Agency	20	761	5%
6	SCImago Institutions Rankings World Report (SCImago)	2009	SCImago Lab	12	5147	5%
7	The Times Higher Education World University Rankings (Times)	2004	TES Global Ltd	13	800	20%
8	Clarivate Analytics Innovative University Ranking (CA)	2015	Reuters	10	100	5%
9	US News and World Report-Global Ranking (USN&W)	2014	US News and World Report	12	1250	5%
10	University Ranking by Academic Performance (URAP)	2010	Middle East Technical University	6	2000	5%
11	QS EECA University Rankings	2016	OS World University Rqanking	10	301	10%

Indicator	1.11 Teaching materials produced and used in the teaching-learning process
Definition	Is the contribution of the university/teaching staff in the realisation of teaching resources for the teaching-learning process existing in the library and/or online in the university's virtual library.
Purpose	It allows to measure the HEI effort to realise teaching-learning resources realised in the last 5 years by the tenured teachers made available to students in the process of education and training.
Calculation method	The ratio of the number of teaching/lecture titles and own books produced (weighted by the coefficient 2) plus the number of titles of applied works to the average annual number of full-time teaching and research staff in the institution.
Symbol	$RDPP^{DF}$
Calculation formula	$$RDPP^{DF} = \frac{3\sum_{i=1}^{n} MDP_i^{DF} + \sum_{i=1}^{n} LA_i^{DF} + \sum_{i=1}^{n} PSS_{S+N}^{DF}}{\overline{PD}^{DF}}$$
Data required	MDP_i^{DF} – *teaching materials (course support) produced by the teaching and research staff (in physical format, existing in the institution's library and/or digital/virtual library of the institution) with ISBN or ISSN/eISSN (Note: according to year of edition)* LA_i^{DF} – *applied works, practical works, seminar/laboratory support, projects, etc. produced by own teaching and research staff (physical format - institution's library and/or digital format - institution's virtual library) with ISBN or ISSN/eISSN (Note: according to year of publication)* PSS_{S+N}^{DF} – *University purchased ISBNs, foreign or/and domestic, for the teaching process by external teachers/specialists* $\overline{PD}^{DF}$ – the *average annual number of full-time tenured teaching and research staff* in the institution *who have worked in the last 5 years in the core area* *i – calendar year* *n – total number of years reported*

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Time period	Last five academic years including the academic year of reporting.
Data sources	Institutional reporting/library catalogue and university virtual platform.
Aggregation level	Aggregation at FF level
Interpretation	A high value of the indicator indicates an increased level of provision of teaching resources to students
Quality standards and limits	The indicator should be based on the data catalogue in the institution's library + online platform.

Indicator	**1.12 Degree of diversity and development of the university offer**
Definition	The diversity of the institution's offer is demonstrated by the organisation of a wide range of fields and bachelor's degree specialisation, the development of programmes taught in foreign languages and/or in various forms of education (PTL or DL).
Purpose	The indicator reflects the capacity, flexibility and effort of the institution to develop the educational offer, i.e. an increased orientation towards the needs of the beneficiaries. This indicator captures the institution's concern about: - diversifying the educational offer; - continuing vocational training of students through DL or PTL programmes; - development of foreign language study programmes that facilitate student and teacher mobility.
Calculation method	The indicator results from the ratio of the sum of all the bachelor's programmes in the FTD form taught in Romanian (or in a national minority language), the number of existing programmes in the PTL form, weighted by 0.4, the number of existing programmes in the DL form, weighted by 0.6, and the number of programmes taught in foreign languages. The sum is related to the maximum number of bachelor's specialisations existing in FF according to the *Nomenclature of fields and specialisations/programmes of bachelor's studies*.
Symbol	GDD^{DF}
Calculation formula	Degree of diversity and development of the university offer

	$GDU_k^{DF} = \frac{\sum prIF + 0{,}4 \sum prIFR + 0{,}6 \sum prID + \sum prLS}{Nr.\,specializări\ în\ DF_k}$ Note: *In the study programmes Modern Language and Literature + One Foreign Language; French/German/English Language and Literature; Translation and Interpreting, Applied Modern Languages (English, French, German) in FTL,* $\sum prLS = 0$
Data required	$\sum prIF -$ total bachelor's degree programmes developed in FTL $\sum prIFR -$ total bachelor's programmes developed in PTL $\sum prID -$ total bachelor's programmes developed in DL $\sum prLS -$ total bachelor's programmes taught in foreign languages $Nr.\,specializări\ existente\ în\ DF$ - total existing bachelor's majors in the Fundamental Field according to the current GD *k*- Fundamental Field of Classification
Time period	Reporting year
Data sources	GD/Institutional reporting
Aggregation level	Study programme level
Interpretation	The indicator captures the development of the study programme offer on different forms of education (PTL or DL) and/or in different teaching languages.
Quality standards and limits	A study programme in DL, which takes place in several territorial centres, is only considered once. Language and Literature programmes in the field of Philology are counted once.

1.13 Student/graduate satisfaction (Section I)

(See questionnaire inserted at the end of the indicators)

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6 PART II. COMPOSITE INDICATORS USED IN THE RANKING OF BACHELOR'S DEGREE PROGRAMMES

Ranking principles:

1. Data entry and determination of indicators for ranking purposes is carried out for all bachelor's degree programmes at the form of education of full-time learning (FTL), in all teaching languages (Romanian, languages of national minorities or foreign languages).
2. The indicator size, i.e. the category (A, B, C, D or E) obtained by the specialisation ranked in the FTL form, is assigned for the specialisation programmes developed/existing in the DL or/and PTL form.
3. If the university has the same bachelor's degree programme in the form of full-time learning in more than one territorial centre, the ranking of the programme is carried out for each territorial centre.

Indicator	**2.1. Degree of competitiveness/attractiveness on admission**
Definition	Indicates candidates' level of prior training and their determination centred on specialisation.
Purpose	The indicator measures the attractiveness of the degree programme among candidates for a Bachelor's degree. It also reflects the institution's concern and effort to select candidates more rigorously. Highlights the determination and preparedness of the candidates.
Calculation method	The indicator is calculated as the ratio between the sum of the Baccalaureate (BAC) averages of the students enrolled in the first year (first) of the bachelor's programmes, full-time learning, and the total number of students enrolled in the first year (first). The ratio is weighted by **1.1** for programmes that have entrance exams in the major.
Symbol	**GCA**
Calculation formula	$GCA = \frac{\sum_{i=1}^{n} MBAC_i^{PS} \cdot ST_{L\ anul\ I\ i}^{PS}}{\sum_{i=1}^{n} ST_{L\ anul\ I\ i}^{PS}} \cdot (1 + 0{,}1\ ExAdmit).$
Data required	$\mathrm{MBAC_i^{PS}$ – *BAC average of candidates enrolled in bachelor's degree programmes, full-time learning form*

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	$St_{L\ anul\ I}^{PS}$ — *number of students enrolled in the PS study programme in the first year, full-time learning* $ExAdmit$ — the *existence of an entrance examination, if entrance examinations in the field of specialisation were taken in the year of assessment (at least one written test/practical* test of artistic and sporting ability *taken at the university in the programme subject to ranking). (Yes=1, No =0)* *No aptitude or foreign language tests are taken into account.* *t — academic year of reporting* *k – number of students enrolled in the PS study programme in the first year of full-time learning*
Time period	The last five academic years are taken into account
Data sources	Bachelor's degree programme in the form of full-time learning.
Aggregation level	Level of bachelor's degree programme: full-time learning.
Interpretation	The higher the Baccalaureate average of enrolled students, the higher the value of the indicator.
Quality standards and limits	The indicator should be based on the student's admission status.

Indicator	**2.2. Degree of diversity and development of specialisation**
Definition	The diversity of a major's offer is demonstrated by the possibility of training students in study programmes offered in foreign languages and/or various forms of education (PTL or DL).
Purpose	The indicator reflects the institution's capacity, flexibility and effort to develop its educational offer. Increased focus on the needs of beneficiaries. This indicator captures the institution's concern about: - vocational training of students through DL or PTL programmes; - development of foreign language study programmes that facilitate student and teacher mobility.
Calculation method	The indicator results from the summation of the programme in the IF form of study with:

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	– if the programme also exists in PTL form weighted by 0.4 – if the programme also exists in DL form weighted by 0.6 – if the programme also exists in a foreign language weighted by 1.0
Symbol	GDD^{Sp}
Calculation formula	$$GDD^{Sp} = \sum_{k=1}^{s} prIF_k + 0{,}4 \cdot \sum_{k=1}^{s} prIFR_k + 0{,}6 \cdot \sum_{k=1}^{s} prID_k + \sum_{k=1}^{s} prLS_k$$ Note: a) *for Language and Literature study programmes at the FTL in the field of Philology,* $prLS = 0$ *b) if an bachelor's degree programme operates at a foreign language-only FTL, the size of the indicator is equal to 2 (excluding those in a))* *c) the size of the indicator obtained becomes a constant for all programmes developed within the specialisation*
Data required	$prIF$ – the programme is developed in FTL $prIFR$ –the programme is developed in PTL $prID$ – the program is developed in DL $prLS$ – the programme is developed in a foreign language s – number of extensions in which the study programme is organised
Time period	Reporting year
Data sources	GD/Institutional reporting
Aggregation level	Study programme level
Interpretation	The indicator captures the development of the study programme offer on different forms of education (PTL or DL) and/or in different teaching languages.
Quality standards and limits	A study programme in DL, which takes place in several territorial centres, is only considered once. Language and Literature programmes in the field of Philology are counted once.

Indicator	2.3. Ratio of students to tenured teaching and research staff
Definition	Represents the degree of coverage of the educational demand with own teaching and research staff in the bachelor's programme.
Purpose	This indicator measures the level of provision of own human resources in the teaching-learning and research process.
Calculation method	The ratio of the total number of students enrolled in the degree programme to the total number of tenured teaching and research staff in the institution who have taught in the degree programme in the last 5 years.
Symbol	RSCD
Calculation formula	$\text{RSCD} = \frac{1}{n}\sum_{i=1}^{n} \frac{St_{Li}^{PS}}{PD_i^{PS}}$
Data required	St_{Li}^{PS} – *total number of students enrolled in the PS study programme in the year* ***i*** PD_i^{PS} – *the number of tenured teaching staff in the institution who worked on the programme subject to the ranking (regardless of whether the activity was on a basic or hourly basis)* *i – academic year* *n – total number of years reported*
Time period	The last five academic years prior to the academic year of reporting are taken into account.
Data sources	Single Register of Romanian Universities, institutional reporting Proof of data: The student's status and catalogue.
Aggregation level	Bachelor's degree programme in the form of full-time learning
Interpretation	In terms of the quality of the teaching process, a lower value of the indicator expresses better availability of human resources supporting the teaching process for the study programme. It is necessary to identify situations where the calculated value is strongly influenced by a very small number of students being enrolled in the study programme, and the programme runs in parallel with other study programmes.
Quality standards and limits	The indicator should be based on verifiable data on the number of students and teaching staff by subject area. The indicator is standardised by the minimisation relation.

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Indicator	2.4. Teaching resources developed for the teaching-learning process
Definition	Represents the contribution of the teaching staff in the realization of teaching resources for the teaching-learning process existing in the library and/or online - the university's virtual library.
Purpose	The indicator allows to measure the HEI effort to produce teaching-learning resources, developed in the last 5 years by the teaching staff and made available to students in the process of education and training.
Calculation method	The ratio of the number of teaching/teaching titles completed (weighted by a coefficient of 2) plus the number of titles of applied work to the *average annual number of full-time teaching and research staff in the institution.* The ratio is weighted supra-unit with the normalised value of Indicator ***1.6 Research output through publications***, an indicatorobtained by FcF at classification.
Symbol	$RDPP^{PS}$
Calculation formula	$$RDPP^{PS} = \frac{2\sum_{i=1}^{n} MDP_i^{PS} + \sum_{i=1}^{n} LA_i^{PS} + 0{,}5\sum_{i=1}^{n} ARD_i^{PS}}{\overline{PD}^{PS}} * (1 + Val.Norm.RCP^{DF})$$
Data required	MDP_i^{PS} – *teaching materials (course support) produced by the teaching and research staff (in physical format - existing in the institution's library and/or digital - virtual library) with ISBN/ISSN/eISSN made available to students in the study programme. (Note: according to year of issue)* LA_i^{PS} – *applied works, practical works, seminar/laboratory support, projects, etc. produced by the teaching and research staff (physical format - library of the institution and/or digital format - virtual library) with ISBN or ISSN/eISSN made available to students in the study programme. (Note: according to year of issue)* ARD_i^{PS} *- other full-text teaching resources that do not have ISBN/ISSN/eISSN (in physical and/or digital format), but are approved by the institution's departments and made available to students enrolled in the study programme. (Note: according to year of issue)*

	$\overline{PD}^{PS}$ – *the average annual number of full-time tenured teaching and research staff in the institution who have been active in the study programme during the last 5 years* $Val.Norm.RCP^{DF}$ – *normalised value per FcF of Indicator 1.6 Research output through publications, indicator obtained at classification* *i – calendar year* *n – total number of years reported*
Time period	Last five calendar years including the academic year of reporting
Data sources	Institutional reporting/library catalogue + university virtual platform
Aggregation level	Bachelor's degree programme
Interpretation	A high value of the indicator indicates an increased level of provision of teaching resources to students.
Quality standards and limits	The indicator should be based on the data catalogue in the institution's library + online platform.

Indicator	**2.5. Degree of internationalisation**
Definition	Is the structure of foreign students enrolled in the study programme subject to prioritisation, multiplied superunitarily by the share of teaching posts occupied by foreign teachers.
Purpose	This indicator measures the degree of internationalisation of the study programme subject to prioritisation.
Calculation method	The ratio of the number of foreign students enrolled in the bachelor's degree programme subject to prioritisation to the total number of students enrolled in the full-time bachelor's degree programme (regardless of teaching language). The ratio is overweighted by the share of teaching posts held by foreign teachers.
Symbol	**INT**
Calculation formula	$$INT = \frac{St_{str.t}^{PS}}{St_{Lt}^{PS}} \cdot (1 + \frac{Nr.PostCD_{Str.t}^{PS}}{Nr.Post\ Stat\ functii_{t}^{PS}})$$
Data required	$St_{str.t}^{PS}$ – *the total number of foreign students enrolled in the bachelor's programme in all years of study (excluding students allocated by MEC to tuition-free places)*

	St_{Lt}^{PS} – *the total number of students enrolled in the bachelor's programme in all years of study* $Nr.PostCD_{Str.t}^{PS}$ - *the number of posts or fractions of posts occupied by foreign teachers teaching in the study programme evaluated in the academic year of the report (including teachers from the Republic of Moldova)* $Nr.Post\ Stat\ functii_t^{PS}$- *the total number of posts existing in the staffing table of the study programme evaluated in the academic year of the report* *t – academic year of reporting*
Time period	The academic year preceding the reporting year is taken into account
Data sources	Unique Register of Romanian Universities (RMUR)/institutional reporting
Aggregation level	Bachelor's degree programme in the form of full-time learning
Interpretation	A high value of the indicator indicates a high degree of internationalisation of the study programme subject to prioritisation.
Quality standards and limits	The indicator is based on verifiable data on the number of foreign students enrolled in the study programme and the status of their functions.

Indicator	**2.6. International study and placement mobility rate**
Definition	Is the intensity of international mobility of students from Romania and abroad through international mobility programmes (ERASMUS, CEEPUS, DAAD, Romanian Government Scholarships, AUF, Fulbright, Education, Scholarships, Apprenticeships and Youth Entrepreneurship Programme funded by the EEA Financial Mechanism), enrolled in bachelor's degree programmes, full-time learning. *Note: Mobility can be carried out provided there are inter-institutional agreements between the sending and receiving organisations.*
Purpose	This indicator measures the intensity of student mobility, recognition of study abroad and the institution's ability to conclude international agreements in the field of study.

Calculation method	The ratio of the number of national and international students who participated in exchange programmes abroad to the total number of students enrolled in the full-time bachelor's programme. Study mobility is weighted by the number of credits recognised by the institution (relative to the maximum 60 ECTS possible). The ratio is weighted super-uniquely by the share of international students (who have undertaken study and placement mobility through the Erasmus+ programme at the study programme evaluated) in the total number of students enrolled in the programme.
Symbol	**INT**
Calculation formula	$$INT = \frac{1}{n}\sum_{i=1}^{n} \frac{2\sum_{j=1}^{m} Mob_{stud.}^{PS} \cdot (1 + \frac{Nr.ECTS\ rec.mob.}{60\ (ECTS)}) + \sum_{j=1}^{m} Mob_{plasament}^{PS} + 3\sum_{j=1}^{m} Mob_{INT}^{PS}}{St_{Li}^{PS}}$$
Data required	$Mob_{stud.}^{PS}$ – *study mobility through international mobility programmes with transferable credit recognition (ECTS) is the total number of students who have participated in a mobility to a study programme in another country, students who have obtained ECTS in certain subjects, which are part of the curriculum of the study programme (including practice)* $Nr.ECTS\ rec.mob.$ – *the number of credits recognised by the institution as a result of study mobility. (Data are calculated annually according to Centraliser 2.6 - ECTS Mobility Spreadsheet)* $Parametrul\ Mob_{stud.as}^{PS} \cdot (1 + \frac{Nr.ECTS\ rec.mob.}{60\ (ECTS)})$ *is noted by* $INT_{stud.as}$ $Mob_{plasament}^{PS}$ – *total number of students who participated in placements in another country without credit recognition. (Data are calculated annually according to the Centraliser 2.6 - Placement Mobilities spreadsheet)* Mob_{INT}^{PS} - *the total number of international students who have undertaken study and placement mobility through the Erasmus+ programme at the programme evaluated. (Data are calculated annually according to Centraliser 2.6 - International Mobility Spreadsheet)*

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	Parametrul $\sum_{as=1}^{d} Mob_{plasament\ as}^{PS}$ *is noted by* $INT_{placement\ as.}$ St_{Lt}^{PS} *– the total number of students enrolled in the bachelor's programme in all years of study in the reporting year* *i – calendar year* *n – total number of years reported (5 years)* *m - number of annual mobilities* *Weighting justification: Study mobility, compared to placement mobility, involves more effort, i.e. more exams/exams taken.* *Justification 60 ECTS – the maximum duration of a mobility can be 12 months, with a maximum of 60 transferable credits.*
Time period	The last 5 years prior to the reporting year are taken into account - in accordance with Centraliser 2.6.
Data sources	Unique Register of Romanian Universities (RMUR)/institutional reporting. Centraliser 2.6
Aggregation level	Bachelor's degree programme in the form of full-time learning
Interpretation	A high value of the indicator indicates an increased intensity of ERASMUS mobility of students enrolled in the bachelor's degree programme and recognition of learning outcomes.
Quality standards and limits	The indicator is based on verifiable data on the number of students who have participated in exchanges abroad.

Indicator	**2.7 Share of students from socio-economically disadvantaged backgrounds**
Definition	Reflects the university's policy and capacity to integrate people from socio-economically disadvantaged backgrounds[2] into educational programmes.
Purpose	This indicator allows the assessment of the capacity to implement social policies at degree programme level regarding the inclusion and support of students from *socio-economically disadvantaged backgrounds*. The indicator highlights the profile and social diversity of the study programme.

[2] According to NCFIS - Indicator IC4.1, the term "socio-economically disadvantaged backgrounds" refers to people living in rural areas or cities with less than 10,000 inhabitants, who come from foster care (orphans)-belong to disadvantaged ethnic groups (Roma)-or are people with disabilities.

Calculation method	Ratio of the number of enrolled students from high schools in rural areas (according to the graduation certificate) to the total number of enrolled students.
Symbol	$PSMD_{\%}$
Calculation formula	$$PSMD_{\%} = \frac{StMD_t^{PS}}{St_{Lt}^{PS}} \cdot 100$$
Data required	$StMD_t^{PS}$ – *total number of students enrolled in the bachelor degree programme from rural areas or cities with less than 10,000 inhabitants from foster care (orphans) or belonging to disadvantaged ethnic groups (Roma) during a bachelor cycle (3, 4, 5, or 6 years) in the reporting year* St_{Lt}^{PS} – *the total number of students enrolled in the bachelor's degree programme during a bachelor's cycle (3, 4, 5, or 6 years) in the reporting year* t – *reporting year*
Time period	Length of schooling cycle
Data sources	Single Register of Romanian Universities/Institutional Reporting
Aggregation level	Bachelor's degree programme in the form of full-time learning
Interpretation	A high value of the indicator indicates a high uptake of graduates from high schools located in rural areas.
Quality standards and limits	The indicator must be based on verifiable data, which can be found in the databases of the Single Register of Romanian Universities and in institutional reports.

Indicator	**2.8. Graduation rate score by promotion**
Definition	Is the graduation rate score by class associated with *student/graduate satisfaction with the quality of the degree programme*.
Purpose	This indicator allows the assessment of the effectiveness of the implementation of educational policies related to the selection, training of candidates, support of students in completing their studies.
Calculation method	1. The average graduation rate is defined as the simple arithmetic mean of the annual ratio of the number of graduates with a bachelor's degree who completed their studies in their

	own institution to the number of students enrolled in the first (first) year during the last 5 academic years. 2. Analysis of the graduation rate distribution and its variability at the level of each ranking field (Gauss curve) in order to establish the *Graduation Rate Score by intervals*. The annual score has values between 0.4 and 1, depending on the graduation rate. The graduation rate between 61% - 80% has a unit score. Deviations from this graduation rate, both plus and minus, show imbalances between the admissions system and the educational system within the degree programme, resulting in inefficient use of resources/effort. *3. The score given to the graduation rate ranges according to the graduation rate distribution* is multiplied by the average score obtained from the evaluation of items 4 and 5 - Questionnaire[3].
Symbol	**SRA**
Calculation formula	Stage 1. Determining the cohort graduation rate *(*GR): $$\text{RA} = \frac{1}{n}\sum_{i=1}^{n}\frac{DABS_{tx}^{PS}}{St_{t1}} * 100$$ Stage 2. Analysis of the distribution of the average graduation rate and its variability at the level of each ranking field (GausHEIn curve), as well as the determination of the graduation rate score (SCORE):

Propunere RA (%)	0 - 30 %	31- 40 %	41- 50 %	51- 60 %	61- 80 %	81- 90 %	91- 100 %
Propunere SCOR	0.4	0.6	0.8	0.9	1	0.8	0.6

Note: Scores and ranges will be determined by analysing the graduation rate distribution and its variability at the level of each ranking field (Gauss curve).

Stage 3. Determine the Final Graduation Rate Score (FGRS) as the product of the *Graduation Rate Score* (SCORE) and the *Mean Value obtained from the assessment of items 4 and 5 - Section*

[3] *Section II - Student/graduate satisfaction with the quality of the study programme*

	II Questionnaire on Student/Academic Satisfaction with the Quality of the Degree Programme (FGRS): $$SFRA = SCOR_t \cdot \overline{SATISF}_t^{PS}$$
Data required	$DABS_t^{PS}$ – *number of graduates with bachelor's degree related to the bachelor cycle awarded to graduates enrolled at the FTL in their own institution from the first year cohort* St_{t1} – *the number of students enrolled in the first year of study at the bachelor's cycle in the full-time learning form enrolled at the FTL in their own institution (from denominator)* $SCOR_t$ - *Scores given to graduation rate intervals according to graduation rate distribution.* $\overline{SATISF}_t^{PS}$ - *Average value obtained from the evaluation of items of questions 4 and 5 -* ***Questionnaire, Section II*** *on Student/graduate satisfaction with the quality of the study programme* *Date of incorporation:* t_x *— year of graduation - (3,4,5 or 6 years)*
Time period	The last five academic years prior to the academic year of reporting are taken into account.
Data sources	Unique Register of Romanian Universities (RMUR)/Institutional Reporting/Questionnaire
Aggregation level	Bachelor's degree programme
Interpretation	A high value of the indicator indicates a higher level of bachelor's graduation rate of students enrolled in the first year of study.
Quality standards and limits	The indicator takes values between minimum 10% and maximum 100%.

Indicator	**2.9. Graduation rate of students from disadvantaged groups receiving scholarships from own funds**

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Definition	Is the graduation rate of a bachelor's degree programme by students who have received scholarships from own funds. The term "*socio-economically disadvantaged backgrounds*" refers to people living in rural areas or towns with fewer than 10,000 inhabitants, who come from foster homes (orphans), or belong to disadvantaged ethnic groups, or are disabled.
Purpose	This indicator allows the assessment of the capacity to implement coherent policies at curriculum level to support students with special needs.
Calculation method	The indicator is calculated as the arithmetic mean of the number of graduates with a bachelor's degree who have received scholarships from own funds, compared to the number of students enrolled in the study programme who have received scholarships from own funds during their studies. The ratio is weighted superunitarily with the share of students who received scholarships from own funds in total enrolled students.
Symbol	RASCD
Calculation formula	$$RASCD = \frac{1}{n}\sum_{i=1}^{n}\frac{PNDA_i^{PS}}{NSCD_i^{PS}} * (1 + \frac{1}{n}\sum_{i=1}^{n}\frac{NSCD_i^{PS}}{St_t^{PS}})$$
Data required	$PNDA_i^{PS}$ – the *number of graduates with a bachelor's degree who received* scholarships from own funds during their *years of study*. $NSCD_i^{PS}$ – the *number of students enrolled in the study programme who have received* scholarships from their own funds *during the years of study (corresponding to the cohort of the year of admission for the classes taken into account in the count)* St_t^{PS} – *the total number of students enrolled in the bachelor's degree programme during a bachelor's cycle (3, 4, 5, or 6 years) in the reporting year* *i – academic year* *n – total number of years reported*
Time period	The last five academic years are taken into account. Time of registration: the end of each academic year of each reporting class, by establishing the nominal list of students who have received scholarships from own funds during each academic year of the bachelor's cycle (a student is registered only once, even if he/she receives a scholarship for several semesters).

Data sources	Single Register of Romanian Universities/Institutional Reporting
Aggregation level	Bachelor's degree programme in the form of full-time learning
Interpretation	A high value of the indicator indicates a high degree completion rate of students from disadvantaged groups who have followed a particular degree programme subject to prioritisation.
Quality standards and limits	The indicator must be based on verifiable data, which can be found in the databases of the Single Register of Romanian Universities and in institutional reports.

Indicator	**2.10. Graduate employment rate**
Definition	Represents the employment rate of graduates with a bachelor's degree in a socio-economic environment.
Purpose	This indicator allows to measure the quality of the training of graduates of the bachelor's degree programme subject to ranking through employment (employability), as well as the labour market demand for the degrees offered by the programme analysed.
Calculation method	This indicator is calculated by dividing the number of graduates with a bachelor's degree who have been employed in the last 5 years by the total number of graduates with a bachelor's degree from the programme of study evaluated in the same time period.
Symbol	ROA
Calculation formula	$ROA = \frac{\sum_{i=1}^{n} NTALCMN_i}{\sum_{i=1}^{n} StLabs_i}$
Data required	$NTALCMN_i$ – *the total number of bachelor's graduates in the last 5 years registered with a full-time employment contract in the recognised databases (REGES and ANFP)* $StLabs_i$ – *total number of graduates with a bachelor's degree* *i – academic year* *n – total number of years reported*
Time period	The last five academic years prior to the academic year of reporting are taken into account.
Data sources	The Single Register of Romanian Universities, the REGES and ANFP databases, or a new national survey to track graduates with bachelor degrees.
Aggregation level	Bachelor's degree programme in the form of full-time learning

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Interpretation	A high level of employability of bachelor's graduates from the study programme subject to prioritisation.
Quality standards and limits	The indicator must be based on verifiable data that can be found in the RMU, REGES and ANFP databases for the period in question.

Indicator	**2.11. Average earnings of graduates**
Definition	Represents the share of the average or median gross earnings of graduates of bachelor's degree programmes in the average earnings of graduates of all degree programmes in the same field of study at country level.
Purpose	This indicator shows the extent to which the degree programme provides knowledge and skills valued by the labour market over what other similar degree programmes offer.
Calculation method	The ratio of the average gross earnings of graduates with a bachelor's degree to the average earnings of graduates of all degree programmes in the same field of study at country level.
Symbol	*CSMA*
Calculation formula	$$CSMA = \frac{1}{n}\sum_{i=1}^{n}\frac{CSMA_PS_i}{CSMA_PS_T_i} * 100(\%)$$
Data required	*CSMA_PS – average earnings of graduates* with a bachelor's degree from the *study programme evaluated;* *CSMA_PS_T – average earnings of graduates* with a bachelor's degree from *all degree programmes in the same field of study, at the country level; (or by relating the numerator to the average gross salary per county, reported by INS.)* *i – academic year* *n – total number of years reported*
Time period	The last five academic years (for which data are available) prior to the academic year of reporting are taken into account.
Data sources	NSI and national database REGES
Aggregation level	Bachelor's degree programme in the form of full-time learning
Interpretation	A high value of this indicator indicates a higher level of appreciation of the quality of the graduates of the study programme by the labour market.

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Quality standards and limits	The indicator should be based on official data on employees' earnings in the labour force.

Indicator	**2.12. Rate of continuation of studies at master or residency level**
Definition	Represents the continuation and retention rate of graduates with bachelor's degrees in master's studies at their own institution.
Purpose	The indicator reflects the prestige of the institution, the bachelor's field of study and the interest of the graduates in continuing their studies at the master's level in the higher education institution.
Calculation method	The ratio of the total number of first-year students enrolled in the master's programmes offered by the higher education institution to the total number of bachelor's graduates from the ranked programme over the last 5 years.
Symbol	*RCSM, RCSR*
Calculation formula	Continuing studies at the Master's level: $$RCSM = \frac{\sum_{i=1}^{n} StMps_i}{\sum_{i=1}^{n} StLabs_i} * 100$$ Continuing residency studies in the fields of medicine, dentistry and pharmacy. In the case of medical degree programmes of more than 240 ECTS, the calculation formula is: $$RCSR = \frac{\sum_{i=1}^{n} StRezid_i}{\sum_{i=1}^{n} StLabs_i} * 100$$
Data required	$StMps$ – the *number of graduates of the prioritised bachelor's programme who are continuing (have continued) their studies in master's programmes* at the same university, *i.e. the number of students enrolled in the first year of the master's* programme in the last 5 years of the cohort of graduates from the denominator *(regardless of the year of graduation)* $StLabs_i$ – *total number of graduates from the last 5 years of the bachelor's program (regardless of class)* $StRezid_i$ - the *number of graduates of the prioritized bachelor's program who are continuing (have continued) their studies in residency programmes, i.e., the number of first-*

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	year students enrolled in residency in the last 5 years from the cohort of graduates from the denominator *(regardless of year of bachelor's graduation)* *Note: In the case of professions regulated at European level with a duration of 300 ECTS or 360 ECTS (medicine and architecture), the integrated cycle (bachelor+master) is considered.* *Note: There is only one cell in the Platform, i.e. the sum of primary data over the last 5 years* *For 5-year medical programmes* *i – academic year* *n – total number of years reported*
Time period	The last five years are taken into account
Data sources	RMUR/institutional reporting
Aggregation level	Study programme level
Interpretation	A high value of the indicator shows an adequate level of mastery by the graduates of the bachelor programme of the learning outcomes assumed by the curriculum, allowing them to continue their studies at a higher level in the same university.
Quality standards and limits	The indicator must be based on verifiable data on graduates of the Bachelor's programme and students admitted to Master's programmes in the same institution. (Admission files). Maximum value = 100%

Indicator	**2.13. Traineeships supported by the institution**
Definition	The indicator measures the proportion of students in a study programme for whom internships are provided through institutional agreements between the higher education institution and specialised external bodies (companies, firms, enterprises, other institutions, etc.) in total students.
Purpose	The indicator allows the assessment of the degree to which students enrolled in the study programme have optimal conditions for practical training that supports the acquisition of the skills assumed by the curriculum.
Calculation method	The ratio of the number of students enrolled in the study programme and following internship programmes provided and

	guided by the university (through partnerships, contracts, agreements, etc.) to the total number of students enrolled in the study programme.
Symbol	SPS
Calculation formula	$$SPS_{\%} = \frac{1}{n}\sum_{i=1}^{n}\frac{StP_i^{PS}}{St_{Li}^{PS}} \cdot 100$$
Data required	StP_i^{PS} – *the number of students enrolled in the full-time study programme (PS), who have completed internships in the country or abroad (according to the curriculum), provided and guided by the institution (through partnerships, contracts, agreements, ERASMUS+, EEA etc. or agreements between the university and institutions, companies abroad) during the academic year* ***i*** St_{Li}^{PS} – *the total number of students enrolled in the bachelor's full-time learning programme in the academic year* ***i*** *i – academic year* *n – total number of years reported*
Time period	The last five academic years shall be considered
Data sources	Bachelor's degree programme in the form of full-time learning
Aggregation level	Study programme level
Interpretation	A high value of the indicator corresponds to a high degree of assurance of the conditions of the internships by the higher education institution as a means of supporting the process of acquiring the skills assumed by the curriculum.
Quality standards and limits	The indicator should be based on verifiable data on the number of students who have completed internships provided by the higher education institution (through internship agreements).

2.14. Student/graduate satisfaction (Section I and Section II)

QUESTIONNAIRE
Assessment of Student Motivation and Satisfaction regarding the Services Offered by the University and the Quality of the Study Programme
(The questionnaire is addressed to students in their final years and/or graduates)

The Ministry of Education and Research, the Romanian Agency for Quality Assurance in Higher Education (ARACIS), together with the Higher Education Institutions in Romania, are concerned about the quality of the university environment and the learning environment in the study programmes. To this end, a nationwide survey is being carried out with the aim of "assessing students' motivation and satisfaction with university services and the quality of the study programme".

Your collaboration and opinion is particularly useful to us in order to establish a concrete picture of the quality of the national higher education system.

The answers are confidential and we ask you to give us 15 minutes to objectively answer the questions in the questionnaire below.

University:

Study programme:

Educational level:

Year of study:

SECTION I - SATISFACTION WITH UNIVERSITY SERVICES

To what extent do you appreciate the following aspects of the services provided by university? *(please rate from 1 to 10, where 1 - very low/totally unsatisfactory .... 10 - very high/totally satisfactory, 88 - I don't know/I don't answer, 99 - not applicable)*

1. The choice of university was determined by *(please select all that apply to you)*

[1] University prestige
[2] Proximity of the university to home
[3] Financial facilities (fees, scholarships, etc.)
[4] Technical and material facilities and equipment (campus, libraries, laboratories, etc.)
[5] Flexibility of educational forms (FTL, PTL or DL)
[6] Socio-economic status offered
[7] Personal level of training
[8] Recommendations from high school teachers and/or peers
[9] Family recommendations
[10] Increased employment opportunities

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2. The atmosphere at the university where you study:

[1] Sense of personal safety and security
[2] Sense of belonging to the campus community
[3] Sense of belonging to the faculty/study programme community
[4] Balance between teaching-learning activities and free time
[5] Extracurricular activities
[6] Activity of student organisations
[7] Overall satisfaction with the university atmosphere

3. The facilities and infrastructure provided by the university where you study:

[1] Campus attractiveness
[2] Accessibility of the campus for all students, including students with disabilities, international students, etc.
[3] Existence of sports and recreation facilities
[4] Equipping teaching and learning spaces
[5] Equipment of study and research laboratories
[6] Existence of common spaces for learning and social activities
[7] Availability of space on campus for activities initiated by students or student organisations (team activities/projects, individual research efforts, etc.)
[8] Satisfaction with the services provided by the university library
[9] Satisfaction with ITC services
[10] Wi-Fi signal quality on campus
[11] Satisfaction with the use of e-learning platforms
[12] Satisfaction with the use of online facilities provided by the university (applications and forms, scholarships, accommodation, etc.)
[13] Satisfaction with accommodation services (*if *you live in the campus*)
[14] Level of satisfaction with dining services *(*if you use the university canteen*)
[15] Satisfaction with university induction/adaptation programmes
[16] Overall satisfaction with the facilities and infrastructure provided by the university

SECTION II - SATISFACTION WITH THE QUALITY OF THE STUDY PROGRAMME
How do you rate the following aspects of the quality of teaching processes in <u>study programme</u>? *(please rate from 1 to 10, where 1 - very low/totally unsatisfactory .... 10 - very high/totally satisfactory, 88 - I don't know/I don't answer, 99 - not applicable)*

4. Teaching activity. Satisfaction with:

[1] High qualification of teachers

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[2] Presentation/explanation of the content of the subjects
[3] Knowledge transfer
[4] Attractiveness of teaching methods
[5] Interaction and student-centredness
[6] Mentoring activity (tutoring)
[7] Teaching activity in general
Comments:

5. Evaluation and communication. Satisfaction with:

[1] Clarity of assessment criteria for subjects
[2] Quality of feedback received for papers/references/projects
[3] Linking the assessment/grading system to knowledge acquired
[4] Communication between teachers and students
[5] Teachers' requirement
[6] Evaluation and communication in general
[7] Involving students in the learning process
Comments:

6. Teaching materials/resources. Satisfaction with:

[1] Availability
[2] Relevance
[3] Quality
[4] Possibility of online access
[5] Teaching materials/resources in general
Comments:

7. Organisation. Satisfaction with:

[1] Availability of information on the study programme
[2] Administrative organisation of the study programme (timetable, syllabuses, etc.)
[3] Weight of seminar/laboratory activities in total hours
[4] Weight of practical activities in total hours
[5] Linking and integrating disciplines within the curriculum
[6] Organisation of the study programme in general
Comments:

8. Material basis. Satisfaction with:

[1] Classroom equipment
[2] Equipment of seminar rooms
[3] Laboratory equipment
[4] Availability and quality of library materials
[5] Material basis in general

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Comments:

9. The education I received in the degree program helped me to develop/improve:

[1] Theoretical knowledge
[2] Practical skills
[3] Scientific research skills
[4] Skills specific to the study programme
[5] Oral and written communication skills
[6] Critical thinking
[7] Analytical and problem-solving skills
[8] Interpersonal skills (teamwork, responsibility, etc.)
Comments:

10. Labour market relevance. Satisfaction with:

[1] Career guidance and counselling activity
[2] Professional development opportunities during the study programme
[3] Cooperation/collaboration with employers
[4] Relevance of the study programme for the labour market in general
Comments:

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7 Algorithm for classifying higher education institutions

Following the approval of **the Methodology of evaluation for the purpose of classification of higher education institutions and ranking of bachelor's degree programmes** as a legislative instrument, the stages of classification of universities are:

Stage 1. Elaboration and issuance of the Order of the Minister of Education and Research on the **Fundamental Fields of Classification**, at the proposal of the Romanian Agency for Quality Assurance in Higher Education and in consultation with the National Council of Rectors.

During public debates with the entire university environment, the National Council of Rectors and MEC representatives, it was proposed and validated to regroup the existing core areas and rename FF 60 as follows:

*Table 1. **Grouping of Universities by Fundamental Classification Fields***

Fundamental Classification Field (FcF)
FcF 10. Mathematics and natural sciences
FcF 20. Engineering sciences
FcF 30. Biological and biomedical sciences
FcF 40. Social sciences
FcF 50. Humanities
FcF60. Vocational field: Sport science, physical education and arts

Stage 2. Informing higher education institutions about the university classification process. Access to the IT platform.

Higher education institutions are informed in good time about the external evaluation process for ranking universities. Institutions are given access to the IT platform designed for this purpose, where they enter the identification data that will generate the *Institution Profile* (basic statistics). This data will cover: name of the university, location, year of establishment, registration code, existing fields and programmes and their accreditation status, size (number of students enrolled by academic cycles and fundamental fields of classification - FcF), assumed mission.

Stage 3. The grouping of universities by fundamental areas of classification is carried out, depending on the ***complexity of the university***, on the basis of the *statistically significant* weight of the number of students enrolled in the year of evaluation, in all university cycles.

Based on the data entered by universities in step 2, the complexity of the university is identified.

A university operates in a ***FcF*** with a share considered *statistically significant* if at least 10% of the total number of enrolled students–follow degree programmes falling within that FcF.

The calculation of the weight is made by summing up at the level of each FcFi the students enrolled in the three study cycles, in relation to the total number of students enrolled in the year of evaluation in the university.

$$g_{DFci} = \frac{St_{Li+Mi+Di}}{\sum St_{Li+Mi+Di}} \cdot 100$$

Where:

i - Fundamental Field Classification (FcF) $i = \overline{10;60}$;
Li, Mi, Di - Bachelor's, Master's, PhD in FcF$_i$;
$St_{Li+Mi+Di}$ - *Students enrolled in the year of the evaluation in bachelor's, master's and doctoral degree programmes in FcFi;*
$\sum St_{Li+Mi+Di}$ - *Total students enrolled in the year of evaluation in* all university cycles.

Note: For programmes of 300 ECTS and above, bachelor's studies also include the master's cycle (medicine, pharmacy, architecture, etc.)

Table 2. **Distribution of student weights by core classification areas at each institution**

HEI CODE	Higher education institution	Fundamental field of classification (FcF)/ Weight of students g_{DFci} %						
		FcF 10	FcF 20	FcF 30	FcF 40	FcF 50	FcF 60	Univ.
U01	University X	g_{DFc10}		g_{DFc30}		g_{DFc50}		100%
U02	University Y		g_{DFc20}	g_{DFc30}				100%
U03	University Z	g_{DFc10}	g_{DFc20}		g_{DFc40}			100%
U04	University Q				g_{DFc40}			100%
	Etc -universities							

On the basis of the weights obtained by FcFi and the classification principle established in the methodology (Article 8), institutions are grouped according to the profile and complexity of the offer, resulting in the following categories of **universities**:

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Table 3. **Grouping of universities by significant share of students in the core areas of classification**

Principle	Categories	Fundamental Classification Field	Group of universities
A single FcF in which the proportion of enrolled students is above 75% and below 10% in the other FcF	Homogeneous universities	FcF 10. Mathematics and natural sciences	...
		FcF 20. Engineering sciences	...
		FcF 30. Biological and biomedical sciences	...
		FcF 40. Social sciences	...
		FcF 50. Humanities	...
		FcF60. Vocational field: Sport science, physical education and arts	...
The weight of students enrolled in FcF is over 10%	Heterogeneous universities active in two FcF		...
	Heterogeneous universities active in three to four FcF		...

Stage 4. Issuing of the Order of the Minister of Education and Research with the **selected Composite Indicators on the ranking of universities** and **their weights**, on the proposal of ARACIS and in consultation with the National Council of Rectors.

Assessment of universities for ranking is carried out using 13 composite indicators covering 6 dimensions and reflecting the activities and results of the academic environment as a whole.



Figure 2: Dimensions of indicators for ranking universities

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In the year of the evaluation, depending on the educational policies of the MEC, those indicators considered significant *for which data quality and access to data will be ensured* and their **weights** will be selected from Annex II, as shown in Table 4. The weighting of the composite indicators will be determined in consultation between the CNR, MEC and ARACIS.

Table 4. **Weight of composite indicators used in the University Classification**

Composite indicators used in ranking universities	$Pondere\ p_{\%}$
1. Weight of PhD students	
2. Mobility of teaching staff and internationalisation of university provision	
3. Doctoral leadership	
4. Weight of R&D and innovation revenue	
5. Results of research-development-innovation through projects	
6. Research results through publications	
7. Citation research impact results	
8. Results of the university's social involvement	
9. Results of knowledge transfer through patents	
10. University ranking in international rankings	
11. Teaching materials produced and used in the teaching-learning process	
12. Degree of diversity of the university offer	
13. Student/graduate satisfaction *(Questionnaire Section I)*	
Total	**100,0%**

*Note: * For Indicators with a weight of 0, no primary data are required for the ranking of universities in academic year X.*

Stage 5. HEI information on the category and group of universities. Entering data into the IT platform according to composite indicators.

HEIs are informed of their profile and the calendar period for entering primary data/indicators into the IT platform is indicated, according to the structure of the composite indicators used.

Stage 6. Issuance of the Order of the Minister of Education and Research on the algorithm of data processing and aggregation for the classification of universities, on the proposal of ARACIS and MEC.

The processing and aggregation algorithm involves the presentation of statistical methods and techniques for determining the Aggregate Indicators on the classification of universities according to the legislation in force, as follows:

Step 1. Normalisation of composite indicators.

Min-max method:

a) used when maximising size (PhD students' weight, research results, etc.)

$$vn = \frac{x_i - x_{min}}{x_{max} - x_{min}}$$

b) used when size minimisation is desired (student/faculty ratio, etc.)

$$vn = \frac{x_{max} - x_i}{x_{max} - x_{min}}$$

Where:

vn - *normalised value*
x_i – *valoarea indicatorului compozit obținut la nivel de DFc*
x_{min} - the *minimum value obtained in FcF*
x_{max} - *maximum value in FcF*

Zero scores method. In this situation the normalisation formula is:

$$z = \frac{x_i - \overline{x}}{\sigma}$$

Where:

z - *normalised value*
x_i – *valoarea indicatorului compozit obținut la nivel de DFc*
$\overline{x}$ - *average value obtained in FcF*
σ - *standard deviation obtained in FcF*

Step 2. **Determination of the Aggregate Index** at the level of each **ICFcF Fundamental Classification Field** within the established groups of universities (calculation relationship conditional on the number and weight of composite indicators).

$$ICDF_x = \frac{\sum_{i=1}^{n} vn_i \; p_i^{\%}}{100}$$

Where:

vn_i - *normalised value of composite indicator i;*
$p_i^{\%}$ - *weighting of composite indicators i.*

Step 3. **Establishment of categories A, B and C at the level of each fundamental classification field.** This is done by grouping on three equal intervals based on the following relationships:

a) determination of the size of the ***clustering interval*** *(h)*, which is calculated as the ratio of the absolute amplitude of variation to the number of clusters:

$$h = \frac{x_{max} - x_{min}}{3}$$

b) to determine the groups, start from x_{min} and successively add the size of the grouping interval *(h)* resulting from the previous calculation. The value on the left of the range will be considered as the lower limit and the value on the right as the upper limit.

Ex. Stabilirea categoriilor: A, B și C corespunzător DFc10

Univ. în DFc10	Nivel ICDFc10 normalizat	Categoria/ Scorul (S)
Univ. A	0,1234	Categoria A S=1
Univ. B	0,2345	
Univ. C	0,3246	
Univ. D	0,5401	Categoria B S=2
Univ. E	0,5463	
Univ. F	0,6543	
Univ. G	0,6786	
Univ. H	0,9876	Categoria C S=3
Univ. I	0,9897	

Mod determinare:

Principiul praguri – grupare pe 3 intervale egale, în baza relațiilor:

a) determinarea mărimii ***intervalului de grupare*** *(h)*

$$h = \frac{x_{max} - x_{min}}{3} = \frac{0,9897 - 0,1234}{3} = 0,2888$$

b) 3 intervale de variație egale – **3 praguri**

Intervalul/Categoria	Valori /praguri
Intervalul 1 Categoria A	$(x_{min} + h)$ 0,1234 - 0,4122
Intervalul 2 Categoria B	0,4122 - 0,7009
Intervalul 3 Categoria C	0,7009 - 0,9897

Note: If the difference of two successive indices that are in different categories is less than or equal to 0.01 ($ICDF_{xi} - ICDF_{xi-1} \leq 0,01$), then the dividing line will change once and include the previous value, and the university with the index $ICDF_{xi-1}$ moves to the category of the corresponding university $ICDF_{xi}$.

Table 5. Example: **Classification within university clusters by fundamental fields of classification (FcF) in categories A, B and C**

Group of universities	Higher education institution	Fundamental field of classification (FcF)/ Category: A, B and C					
		FcF 10	FcF 20	FcF 30	FcF 40	FcF 50	FcF 60
Heterogeneous universities	University A	**A**	**-**	**C**	**-**	**B**	-
	University B	**A**	**B**	**C**	**-**	**C**	**-**

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Group of universities	Higher education institution	Fundamental field of classification (FcF)/ Category: A, B and C					
		FcF 10	FcF 20	FcF 30	FcF 40	FcF 50	FcF 60
with three to four FcF	University C	**B**	**C**	-	**A**	-	-
	University D	**A**	**C**	-	**B**	-	-
	University E	**B**	**A**	**B**	**C**	-	-
	University F	**B**	**A**	**B**		-	-
	University G	**C**	**B**	-	**C**	**A**	-
	University H	**C**	**B**	**A**	**C**	-	-
	University I	**A**					

Where:

	Category A *- Education-centred universities;*
	Category B *- Universities of education and scientific research or universities of education and artistic creation;*
	Category C *- Advanced research and education universities.*

Stage 7. Classification of universities in categories A, B and C according to the legislation in force

Following the classification steps within the groups of universities by core subject area classification (FcF), the ranking of universities by categories A, B and C as a whole is carried out by determining **the Aggregate University Index (UCI)**, which combines the positions of each university in all core subject areas:

Determination of the University Aggregate Index (UCI)

$$ICU = \frac{\sum_{x=1}^{n} ICDF_x \cdot S \cdot g_x^{\%}}{\sum_{x=1}^{n} g_x^{\%}}$$

Where:

S - score allocated to category A=1; B=2, C=3

$g_x^{\%}$ *- share of students in the Fundamental Field of classification*

The result of the evaluations aimed at ranking universities will be published by an Order of the Minister of Education and Research.

Table 6. **General table on the classification of universities by fundamental fields of classification (FcF) and by category (A, B and C)**

HEI CODE	Higher education institution	Fundamental field of classification (FcF)/ Category of universities on their "centring" A, B, C

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		FcF 10	FcF 20	FcF 30	FcF 40	FcF 50	FcF 60	Univ.
U01	University X	A	-	C	-	B	-	B
U02	University Y	-	B	C	-	-	-	C
U03	University Z	B	C	-	A	-	-	B
U04	University Q	-	-	-	C	-	-	C
	Etc.							

Where:

	Category A *– Education-centred universities;*
	Category B *– Universities of education and scientific research or universities of education and artistic creation;*
	Category C *– Advanced research and education universities.*

8 Algorithm for the ranking of bachelor's programmes

Following the approval of **the Methodology of evaluation for the purpose of classification of higher education institutions and ranking of bachelor's degree programmes** as a legislative instrument, the stages of classification of universities are:

Stage 1. **Elaboration and issuance of an Order of the Minister of Education and Research on the list of the ranking bachelor's fields**, in the year of evaluation, on the proposal of the Romanian Agency for Quality Assurance in Higher Education and in consultation with the National Council of Rectors.

The hierarchisation of bachelor's degree programmes related to the bachelor's fields is achieved by the establishment of bachelor's ranking fields, hereinafter referred to as ***BRF***.

BRFs may differ from the degree fields established on the basis of the annually approved *Nomenclature of fields and programmes of university studies, accredited or provisionally authorised fields and programmes of university* studies.

In order to ensure comparability of results, bachelor's degree programmes with less than 8 active bachelor's degree programmes at the time of the evaluation **are grouped together** in a related degree programme, i.e. in the same field of science.

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It is therefore necessary to draw up an Order of the Minister of Education and Research on the list of the ranking bachelor's fields and their related bachelor's degree programmes according to the nomenclature.

Stage 2. Informing higher education institutions about the ranking process of bachelor's degree programmes. Access to the IT platform.

Higher education institutions are informed in good time about the external evaluation process in order to rank study programmes. Institutions are given access to the IT platform designed for this purpose, where they enter data on the level of each existing study programme in the university offer.

Stage 3. Development and issuance of an Order of the Minister of Education and Research on *List of composite indicators on the ranking of study programmes and their weights*, in the year of evaluation, at the proposal of ARACIS and in consultation with the CNR

The assessment of study programmes for ranking will be done on six dimensions using 14 composite indicators covering the six dimensions: *Teaching-Learning, Science and Research, Internationalisation, Regional and Social Involvement, Knowledge Transfer, Student/Academic Satisfaction (National Questionnaire, Part II)*.
In the year of the evaluation for ranking purposes, according to the educational policies of the MEC and the **degree of quality assurance, validation and access to data**, those indicators considered significant will be selected from Annex II and the validated indicators and their weights will be established.
Following consultation with all stakeholders, the composite indicators used in the process of prioritising bachelor's degree programmes by Prioritisation Area and their weights are presented in Table 7.

Table 7. **Weight of composite indicators used in the ranking of bachelor's degree programmes by ranking fields**

Composite indicators used in the ranking of bachelor's degree programmes	$Ponderepi_{\%}$
1. Degree of competitiveness/attractiveness on admission	
2. Degree of diversity and development of specialisation	
3. Ratio of students to tenured teachers	
4. Teaching resources developed for the teaching-learning process	
5. Degree of internationalisation	
6. International study and training mobility rate	
7. Weight of rural students	

Composite indicators used in the ranking of bachelor's degree programmes	$Pondere\ pi_{\%}$
8. Graduation rate score by promotion	
9. Graduation rate of students from disadvantaged groups, beneficiaries of social grants	
10. Graduate employment rate	-
11. Average earnings of graduates	-
12. Rate of continuation of Master's studies	
13. Internships supported by the institution	
14. Student/graduate satisfaction *(Questionnaire Section II)*	
Total	**100.0%**

Note: Indicators with a weight of 0 are not required when ranking study programmes

Stage 4. Elaboration and issuance of an Order of the Minister of Education and Research on the algorithm of data processing and aggregation, in the year of evaluation, in order to rank study programmes, at the proposal of the Romanian Agency for Quality Assurance in Higher Education

The processing and aggregation algorithm, which involves the presentation of statistical methods and techniques for determining the Aggregated Ranking Indicators, is presented below:

Step 1. Normalisation of composite indicators.

Min-max method:

a) when it is desired to maximise the phenomenon (share of doctoral students, research results, etc.)

$$vn = \frac{x_i - x_{min}}{x_{max} - x_{min}}$$

b) when it is desired to minimise the phenomenon (students/teaching staff ratio, etc.)

$$vn = \frac{x_{max} - x_i}{x_{max} - x_{min}}$$

Where:

vn - *normalised value*

x_i – *valoarea indicatorului compozit obținut la nivel de Domeniu de ierarhizare*

x_{min} - *minimum value obtained in Domeniul de ierarhizare*

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x_{max} – *maximum value in de Domeniu de ierarhizare*

Zero scores method. In this situation the normalisation formula is:

$$z = \frac{x_i - \overline{x}}{\sigma}$$

Where:

z - *normalised value;*
x_i — *valoarea indicatorului compozit obținut la nivel de DI;*
$\overline{x}$ - *average value obtained in DL;*
σ - *the standard deviation obtained in DL.*

Step 2. Determination of the aggregate index at the level of the Ranking Field (the calculation relationship is conditioned by the number and weight of composite indicators)

$$ICDL_x = \frac{\sum_{i=1}^{n} vn_i \; p_i^{\%}}{100\%}$$

Where:

vn_i - *normalised value of composite indicator i;*
$p_i^{\%}$ - *weighting of composite indicators i.*

Step 3. Establishment of categories A, B, C, D and E at the level of each ranking field. This is done by grouping into five equal intervals based on:

a) determination of the size of the ***clustering interval*** *(h)*, which is calculated as the ratio of the absolute amplitude of variation to the number of clusters:

$$h = \frac{x_{max} - x_{min}}{5}$$

b) the determination of the groups starts from x_{min}, adding successively the size of the grouping interval *(h)* resulting from the previous calculation. The value on the left of the range will be considered as the lower limit and the value on the right as the upper limit.

Stabilirea categoriilor de ierarhizare a programelor de studii de licență: A, B, C, D și E
Ex. Domenii de licență Chimie

Principiul praguri – grupare pe 5 intervale egale:
a) determinarea mărimii ***intervalului de grupare*** (h)

$$h = \frac{x_{max} - x_{min}}{5} = \frac{0{,}9671 - 0{,}1111}{5} = 0{,}1712$$

b) 5 intervale de variație egale – **5 praguri**

Intervalul /Categoria	Intervalele
Intervalul 1 Categoria E	$(x_{min} + h)$ 0,1111-0,2823
Intervalul 2 Categoria D	0,2823-0,4535
Intervalul 3 Categoria C	0,4535-0,6247
Intervalul 4 Categoria B	0,6247-0,7959
Intervalul 5. Categoria A	0,7959-0,9671

Ex. Domeniul de licență **Chimie** are 6 specializări (U, V, W X, Y, Z), iar numărul de programe de studii universitare = **24**.

Programele de licența din DL Chimie	$ICDL_x$	Categoria
1. Programul X – Universitatea...	0,1111	
2. Programul Y – Universitatea...	0,1234	
3. Programul Z – Universitatea...	0,1256	**Categoria E 5 prog.**
4. Programul X – Universitatea...	0,2354	
5. Programul Z – Universitatea...	0,2453	
6. Programul U – Universitatea...	0,2823	
7. Programul Z – Universitatea...	0,3203	
8. Programul X – Universitatea...	0,3584	**Categoria D 5 prog.**
9. Programul Z– Universitatea...	0,3964	
10. Programul X – Universitatea...	0,4344	
11. Programul Z – Universitatea...	0,4725	
12. Programul X – Universitatea...	0,5105	
13. Programul W – Universitatea...	0,5486	**Categoria C 6 prog.**
14. Programul U – Universitatea...	0,5866	
15. Programul X – Universitatea...	0,6146	
16. Programul X – Universitatea...	0,6227	
17. Programul Y – Universitatea...	0,7007	
18. Programul W – Universitatea...	0,7388	**Categoria B 3 prog.**
19. Programul X – Universitatea...	0,7768	
20. Programul V – Universitatea...	0,8148	
21. Programul X – Universitatea...	0,8529	
22. Programul V – Universitatea...	0,8909	**Categoria A 5 prog.**
23. Programul Z – Universitatea...	0,9290	
24. Programul X – Universitatea...	0,9671	

Stage 5. Elaboration of the Order of the Minister of Education and Research on the results of the ranking of bachelor's degree programmes

At the end of the evaluations, for the purpose of ranking the bachelor's degree programmes, the results will be published by Order of the Minister of Education and Research on the results of the ranking of bachelor's degree programmes.

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