



The First International Program Global World Communicator Education and Science



World University Parametric Rankings - Parametric RankPro Section: Education and Science

Parametric RankPro – navigator for development and global opportunities

Parametric RankPro is a software resource that allows the university independently to assess the university, its structural subdivisions, curricula (subjects) and research on the comparative parameters of the leading universities in the world by sections of Education (Academic Portfolio Profile) and Science (Research Portfolio Profile) in real time.

Parametric RankPro allows to determine, demonstrate and promote the competitive advantages of the university, its departments, curricula (subjects) and research projects.

Methodology and software Parametric RankPro

Basic postulates of methodology.

Drawing up world rankings of universities in their numerical sequence is an activity rather ambiguous and largely subjective. This circumstance is exacerbated by differences in education systems, structures of universities and organization of scientific research in different countries.

Analysis of a substantial amount of materials obtained during preparation and rankings of the RankPro for six years as well as methodologies used by various world rating systems show that a real sequence of ranking places can be made only for several hundred universities from more than 20,000 universities in the world. When trying to compile rating in various rating systems for at least 1000 universities this circumstance obliges compilers to assign ratings to groups of tens and hundreds of universities or to divide general world rating by regions of the world or by areas of activity so that more universities can show their competitive advantages. This does not illustrate a general position of a university's rank in the world.

Moreover, according to existing systems of evaluation a large number of universities with significant competitive advantages fall out of world ratings. These are usually small, narrow profile universities, universities, which do not conduct extensive scientific work but prepare high quality and sought-after specialists.

Therefore, it is logical to create a system for university evaluation by rank of its various fields of activity. Within the framework of this system, ranks are determined by indicators compiled on the basis of real numerical parameters (statistical and structural) of each area of the university activity, and the overall rankings portrait is represented as a matrix with elements - rank/field of activities.

Based on the postulates initial conditions of the Parametric RankPro are defined:

1. The rating is not generated as a distribution of places by a numerical equivalent of variously calculated ranking indicators, but as an aggregate of categories (ranks) of different fields of activities of the university. This ensures correctness of the approach to universities of different magnitude and focus.
2. All areas of university activities are of equal importance.
3. The category (rank) of a university in each area is defined by indicators that are determined only by parameters from a given field of activity of the institution.
4. The ranking fields are determined by the fields of activity of the university.
5. Parameters of evaluation and indicators of each of the ranking fields are determined by a survey of members of the ICS Council, university professors participating in the project and using a software resource, an analysis of the relevant fields of activities of leading universities in the world.
6. Four highest categories of a university are defined in each field of activity: Best, Leading, Class, and Perspective.
7. Ranking is available not only for the university, but also for its structural subdivisions, programs, projects, and individual employees in the ranking fields in which this is possible.

Parametric RankPro software allows any university to independently determine its own matrix of world ranks of various spheres of its activity, independently demonstrate and promote its competitive advantages.

The Academic Portfolio Profile (APP)

The Academic Portfolio Profile (APP) is a tool for self-ranking in the format of the world classification of study programs, fields of study (subjects of study), university divisions and the university as a whole.

Ranking areas: students (student community) 18%, staff (community of employees) 21%, study programs 19%, research activities 27%, awards and honorary titles 15%.

Evaluation indicators are defined as the ratio of parameters that determine the structure and activity of universities.

Evaluation parameters.

- Student community: total number of students, number of foreign students, number of students in programs of various levels of education, number of applicants and number of admitted students, respectively, for programs of various levels of education. 14 parameters in total.
- Community of employees: total number of employees, academic staff, number of professors and doctors of science, number of foreign teachers and research staff. 7 parameters in total.
- Study programs: number of programs at various levels of education, distance and continuous learning. 7 parameters in total.
- Research activities: number of research departments, researchers, foreign researchers, number of students engaged in research, number of publications over the past year. 5 parameters in total.
- Awards and honours: number of members of national and foreign academies of sciences, number of Nobel laureates and winners of foreign and national awards, including among students over the past 5 years. 7 parameters in total. 40 parameters altogether.

Ranking indicators.

Ranking indicators are defined as ratios of rating parameters. The indicators and their contribution to the overall result were determined in the course of projects conducted within the framework of the GWC program and surveys among university professors, participated in the program from 2012 to 2019.

The ranking results are presented in four groups (Best, Leader, Class, and Perspective) for each ranked units and the university as a whole.

Division by groups is determined by values of indicators ranks corresponding to the world TOP 500 in the corresponding ranking area. Minimum indicator values for groups are determined by indicator values for positions of 100, 200, 350, and 500 in the TOP 500 of the world's leading universities for a corresponding indicator.

The Research Portfolio Profile (RPP)

The Research Portfolio Profile (RPP) is a tool for assessing scientific competence and activities of individual researchers, groups of researchers, university divisions and a university as a whole.

Ranking areas: scientific publications 39%, innovations 17%, scientific activity 14%, scientific management 14%, awards and honorary titles 16%.

Evaluation parameters.

- Scientific publications: journal articles, books, book chapters, monographs, conference materials, study and methodical materials for teaching.
- Innovations: patents and inventions.
- Scientific activity: scientific projects, start-up projects, spin-off projects.
- Scientific management: research projects, graduate students, doctoral students.
- Awards and honours: national, international.

Ranking indicators.

Ranking indicators for an individual researcher are defined as absolute values of assessment parameters, and for groups of researchers, university units and universities as a ratio of assessment parameters to academic staff of groups, units and the university, respectively. The indicators and their contribution to the overall result were determined in the course of projects conducted within the framework of the GWC program (from 2012 to 2019) and surveys among university professors, participated in the program

The ranking results are presented in four groups (Best, Leader, Class, and Perspective) for each ranked units and the university as a whole.

Division by groups is determined by values of indicators ranks corresponding to the world TOP 500 in the corresponding ranking area. Minimum indicator values for groups are determined by indicator values for positions of 100, 200, 350, and 500 in the TOP 500 of the world's leading universities for a corresponding indicator.

For further development of the software resource and its improvement surveys are conducted annually, not only among universities, which participate in the GWC program, but also among universities, which use the software resource the Parametric RankPro, which allows to dynamically update the content and objectivity of the resource.