NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

The Faculty of Informatics, Mathematics, and Computer Science

Master's programme 'Mathematics'
Portfolio and evaluation criteria

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List of documents for passing the entrance test in the form of the portfolio competition.

1. **Copy of applicant's degree certificate (diploma or academic transcript)**

2. **Results of the Interview (written assignment) - possession of basic knowledge in the subject area (<u>this document is not provided by the applicant</u>)**

   The applicant should complete a written assignment in the following areas of mathematics:

   - Differential calculus of functions of one and several real variables;
   - Integral calculus of functions of one and several real variables;
   - Linear algebra;
   - Analytical geometry;
   - Ordinary differential equations;
   - General algebra;
   - General topology;
   - Probability theory.

   The written assignment consists of:
   1) <u>Theoretical questions (the applicant should formulate a definition or a theorem).</u> 2 questions are given, each is evaluated with a maximum of 5 points (maximum of 10 points for theoretical questions).
   2) <u>Tasks (basic level of difficulty).</u> 9 tasks are given, each is evaluated with a maximum of 5 points (a maximum of 45 points for tasks of the basic level of difficulty).
   3) <u>Tasks (increased complexity).</u> 2 tasks of increased complexity are given, each is evaluated with a maximum of 10 points (maximum of 20 points for tasks of increased complexity).

   The maximum number of points for the written assignment is **<u>75 points</u>**.

3. **Documents confirming personal academic, scientific, and professional achievements of the applicant**
   - Information about additional education: Certificates of online courses, advanced training courses;
   - Copies of language proficiency certificates;
   - Scientific papers and publications / participation in scientific seminars or conferences;
   - CV (work experience);
   - Copies of documents confirming the existence of international scholarships or grants;
   - Copies of documents confirming the experience of research activities.

4. **Motivation letter**
   The applicant lays out his motives for entering the master's programme and highlights one problem from the sphere of his professional interests (for example, a summary of his graduation qualifying work at the previous level of education, or any mathematical problem interest to him).

5. **CV**
   A CV containing information about work experience and/or scientific activity (including practice during university studies), indicating the position and the list of duties performed.

6. **Recommendation letters**
   Recommendation letters from representatives of the teaching staff of the previous educational institution (for example, from the supervisor of the graduation qualifying work).
   Recommendation letter from someone familiar with your professional experience (from place of work).

7. **Scientific papers and publications**
   Articles in foreign or Russian scientific journals indexed by WoS/Scopus, which is included in the List of the Higher Attestation Commission.
   Publications in the proceedings of the conference or publications not indexed by Wos/Scopus and not included in the List of the Higher Attestation Commission.

8. **Professional experience**
   Work experience, internships, teaching in the field related to mathematics.
   Applicants who work (or have successfully passed an interview) in a company whose activities are related to IT/ mathematics/ statistics/ modeling / other knowledge-intensive activities can provide a letter of recommendation from the employer.

9. **Other documents**
   - Application form;
   - Certificates of passing additional courses (including online courses);
   - Description of one industrial or research project that the applicant worked on

EVALUATION CRITERIA

Portfolio Component	Commentary	Maximum number of points
Obligatory documents that must be provided		
Results of the Interview (written assignment)	Theoretical knowledge and ability to handle problems of basic and increased level of complexity are evaluated	75

CV	A CV containing information about work experience and/or scientific activity (including practice during university studies), indicating the position and the list of duties performed	5
Motivation letter	Reflects the reasons why the candidate wants to study at the master's programme; professional interests; expectations associated with studying at the programme; professional plans	5
A copy of the document confirming the level of education (diploma or transcript of academic record)	● The average score is more than or equal to 4.5 out of 5.0 – **3 points** ● The average score is more or equal to 4.0, but less than 4.5 out of 5.0 – **2 points** ● Average score less than 4.0 out of 5.0 – **0 points** ● The diploma corresponds to the master's programme ● Compliance of bachelor's degree with the chosen master's programme, the presence of academic disciplines from the following list in the applicant's diploma is evaluated (while the number of education hours is not evaluated): - mathematical analysis – differential and integral calculus of functions of one and several real variables - linear algebra - analytical geometry - differential geometry - differential equations – ordinary and partial derivatives - general algebra - general topology - probability theory - calculation methods or numerical methods - number theory - functional analysis - management theory - calculus of variations - comprehensive analysis - physics (any section, including any section of mechanics) - theory of dynamical systems The presence in the diploma from 10 or more disciplines from the list above – **3 points**	6

	The presence in the diploma from 5 to 9 disciplines from the list above – **2 points** The presence in the diploma of less than 5 disciplines from the list above – **0 points**	
Documents that can be included in the portfolio (optional)		
Recommendation letters	● A letter of recommendation from a scientist with a Google Scholar H–index of 15 or more – **3 points** ● A letter of recommendation from a scientist with a Google Scholar H–index from 10 to 14 – **2 points** ● A letter of recommendation from a scientist with a Google Scholar H–index from 5 to 9 – **1 point**	3
Scientific papers and publications	● Article (review) in a foreign or Russian scientific journal indexed by WoS/Scopus – **4 points** ● Article (review) in the Russian scientific journal included in the List of the Higher Attestation Commission List – **2 points** ● Publications in the proceedings of the conference or publications not indexed by Wos/Scopus and not included in the Higher Attestation Commission List – **1 point**	4
Professional experience	Work experience, internships, teaching in the field related to mathematics. Applicants who work (or have successfully passed an interview) in a company whose activities are related to IT/ mathematics/ statistics/ modeling / other knowledge-intensive activities can provide a letter of recommendation from the employer Work experience, internship, teaching in the field related to mathematics – **1 point**. The presence of significant professional achievements, internships, teaching in the field related to mathematics – **2 points**	2
	Maximum number of points	100