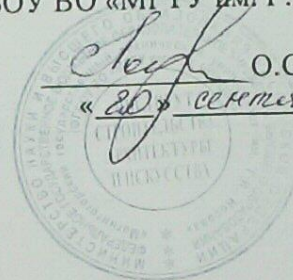МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ
РОССИЙСКОЙ ФЕДЕРАЦИИ

Федеральное государственное бюджетное образовательное учреждение
высшего образования
«Магнитогорский государственный технический университет им. Г.И. Носова»

УТВЕРЖДАЮ:
Директор института строительства,
архитектуры и искусства
ФГБОУ ВО «МГТУ им. Г.И. Носова»

_____ О.С. Логунова
«____» сентября 2019 г.

ПРОГРАММА

вступительного испытания (междисциплинарного экзамена)

для поступающих в магистратуру по направлению
54.04.01 Дизайн (профиль – Digital arts and design)

Магнитогорск - 2019 г.

Составители:

Заведующий кафедрой дизайна
кандидат педагогических наук, доцент   А.Д. Григорьев

профессор кафедры дизайна
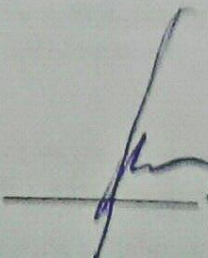кандидат педагогических наук, профессор   Н.С. Жданова

Программа рассмотрена и одобрена методической комиссией института строительства, архитектуры и искусства « 20 » сентября 2019 г., протокол № 1 .

Председатель _____ О.С. Логунова

Согласовано:
Заведующий кафедрой

_____ А.Д. Григорьев

I. General provisions

1. This Regulation establishes the procedure of organizing and conducting entrance tests in the magistracy of the FSBEIHE (Federal state budgetary educational institution of higher education) the "NMSTU", as well as the Appeal proceedings on the results of the testing.

2. The Provision is developed on the basis of:
• Federal Law of the Russian FEDERATION of 29.12.2012, № 273-FZ "On Education in the Russian Federation";
• Order of the RF Ministry of Education and Science № 1147 from 14.10.2015, "On approval of the procedure for admission to the educational programs of higher education - undergraduate programs: bachelor's programs, specialist degree programs, master programs (with changes);
• Rules of admission to the FSBEI HE "Nosov Magnitogorsk state technical University" for training in educational programs of higher education - bachelor's programs, specialty programs, master's programs;
• The Charter of the "NMSTU»;
• Documents regulating the work of the selection Committee and approved by the rector of the FSBEI HE the "NMSTU».
3. Admission to master's degree programs is carried out in the first year.
4. The Conditions for admission to Master's degree programs must be guaranteed by the right to education and admission from among the entrants with the accordance level of education: the most capable and prepared for the development appropriate level of education and the appropriate orientation of persons.
5. Composition of examination and appeal commissions for each direction of Master's training is created for the entrance tests. The Composition of examination and appeal commissions is validated annually by the order of the university rector. The Powers and procedures of the examination and appeal commissions are determined by the Commission provisions (regulations), approved by the Chairman of the Admissions Committee.

I. List and form of entrance tests

6. The Introductory test shall be carried out in the form of computer testing on the interdisciplinary examination of the corresponding direction of the preparation of the Masters.

II. The procedure for the entrance test

7.   The results of final examinations of preparatory departments, preparatory faculties, courses (schools) and other tests are not used in admission to master's degree programs.

8.   The entrance test is conducted in Russian.
9.   The University may hold (when application is received) an entrance test with use of remote technologies in condition of the received identification of the University entrants passing the entrance examinations.
10.   The entrance test conducted simultaneously for all applicants or at different times for different groups of applicants (in process of formation of the specified groups of the persons who submitted necessary documents). For each group of applicants an introductory test is held in one day.
11. The applicant passes the entrance test once.
12. Persons who have not passed the entrance test for a good reason (illness or other documented circumstances) are allowed to take an entrance test in another group or on a reserve day.
13. During the entrance test the participants and the persons involved in their conduct are prohibited to carry and use the means of operational and mobile communication.

14.   The introductory test is given 180 minutes.
15.   In case of violation of the admission rules approved by the University by the applicants during the entrance test, the authorized officials of the University have the right to remove them from the place of the entrance test with drawing up the act of removal.

I. Peculiarities of carrying out entrance tests for citizens with limited opportunities of health and invalids

16.   The University provides entrance examinations for applicants among persons with limited opportunities of health and invalids (hereinafter together - applicants with disabilities), taking into account the peculiarities of their psychophysical development, their individual capabilities and health status (hereinafter – individual features).

17.   The University has created the material and technical conditions to ensure unhindered access of applicants with disabilities in classrooms, toilets and other facilities, as well as their stay in these areas (including the presence of ramps, elevators,, handrails, expanded doorways, elevators; in the absence of elevators, the audience should be located on the ground floor of the building).

18.   The entrance test for applicants with disabilities is conducted in a separate audience.

The number of applicants with disabilities in one audience should not exceed 6 people.

It is allowed to be present in the audience during the entrance test the greater number of applicants with disabilities, as well as conducting entrance tests for applicants with disabilities in the same audience with other applicants, if this does not create difficulties for applicants with disabilities passing the entrance test.

During the entrance test of students with disabilities it is allowed to involve into the audience assistants among the employees of the University or involved persons who provide applicants with disabilities the necessary technical assistance, taking into account their individual characteristics (to take the workplace, move, read and issue a task, communicate with teachers conducting the entrance test).

19.   The duration of the entrance test for applicants with disabilities is increased by 1.5 hours.

20.   Applicants with disabilities are provided in an accessible form the information on the procedure for conducting entrance examinations in the form of computer testing.

21.   Applicants with disabilities can use in the process of passing the entrance test the technical means necessary for them in connection with their individual features.

22.   During the entrance tests the following additional technical means are provided to use depending on the individual features of applicants with disabilities:

1) for the blind:
−   tasks to be performed at the entrance test are made in the form of an electronic document available via a computer with specialized software for the blind, or are read out by an assistant;
−   written tasks are performed on paper in relief-point Braille or on a computer with specialized software for the blind or dictated to the assistant;
−   for task performance, if necessary, a computer with specialized software for the blind is available for applicants;

2) for the visually impaired:
−   individual uniform illumination of at least 300 lux is provided;
−   incoming to perform the task, if necessary, a magnifying device is provided; it is also possible to use your own magnifying devices;
−   if necessary, applicants for performing the task are provided with a magnifying device; it is

also possible to use one's own magnifying devices;
- tasks for implementation, as well as instructions on how to conduct entrance examinations are made out in enlarged font;

3) for the deaf and hearing impaired:
- the availability of sound-amplifying equipment for collective use is ensured; if necessary, applicants are provided with sound-amplifying equipment for individual use;
- sign language interpreter services are provided;

4) for deaf-blind people, there are services of a tiflosurd-translator (in addition to the requirements fulfilled respectively for blind and deaf people);

5) for persons with severe speech impairment, deaf, hearing-impaired introductory tests conducting orally, shall be held in writing;

6) for persons with disorders of the musculoskeletal system, impaired motor functions of the upper limbs or lack of upper limbs:
tasks are performed on a computer with specialized software or dictated to the assistant.

23.   The conditions specified in 18-22 are provided to applicants on the basis of an application for admission containing information on the need to create appropriate special conditions.

24.   The University can conduct entrance tests for applicants with disabilities using remote technologies.

V. Procedure for accounting the individual achievements of the University entrants of the master's program

Points of entrants accrued for individual achievements of the University entrants of the master's course (magistracy) are included in the sum of competitive points. For the presence of several individual achievements of the same name (according to the above list of individual achievements) points are not summed.

The list of the declared individual achievements of the entrant is entered in the application form on the account of individual achievements of the entrant (Appendix 3). The total score of individual achievements of the applicant is recorded in the Protocol of entrance examinations. Filled in an application about registration of individual achievement is embedded in the personal files of the applicants.

Table 1. List of individual achievements taken into account when applying for master's degree programs

Name of achievements	number of points	Documents confirming individual achievement
The presence of a diploma of higher education with honors	**5**	a diploma of higher education with honors

Name of achievements	number of points	Documents confirming individual achievement
Availability of publications: An article in publications indexed in Scopus or Web of Science databases with Impact Factor ≥ 1.0; An article in publications indexed in Scopus or Web of Science databases with Impact Factor less than 1.0; An article in publications indexed in Russian science citation index databases;	**up to 10 points** **5** **3** **2**	printed copy of the page of the official Internet resource of the database indexing the work (for example, Scopus.com, e-library.ru), which displays information about the publication (authors, output, title of the work) and its indexing database (RSCI, Scopus, Wos);
Presence of an award at a competition of scientific works[1], including at a competition of final qualifying works not below the level of the country;	**3**	Diploma of the winner / Prizewinner (awardee)of the competition of research works

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[1] awards received at the competitions of presentations, abstracts, photo-video works, scientific games, case competitions (essays, poems, etc.) are excluded; awards at the competitions organized by a commercial organization (PJSC, JSC, JSC, LLC, IP, etc.) are excluded.

1. Disciplines included in magistracy' entrance examinations program

1.1 History and Theory of Design

1.2 Project activity

1.3 Scientific research in the design sphere

2. The content of academic disciplines

2.1 "History and Theory of Design"

1. Subject-spatial environment. General concepts.

2. Mass machine-made manufacture as the cause of the designs emergence and development.

3. Urbanization of cities as the cause of the designs emergence and development.

4. The great discoveries and inventions of the XIX century as the cause of the designs emergence and development

5. The deepening of the traditions of arts and crafts as the cause of the designs emergence and development.

6. Expansion of the concept of "design" as the cause of the designs emergence and development.

7. The history of the formation of Western design.

8. The evolution of Western design.

9. Basic concepts and definitions of design.

10. Classification of types of design.

11. Constructivism of the 20-30s of the XX century in architecture and design

12. Modern trends of foreign design.

13. National features in the design of different countries.

14. High tech in architecture and design.

15. Deconstruction in architecture and design.

16. Influence of synthetic arts on the development of digital arts.

17. Computer art and digital technology as an aesthetic phenomenon.

18. Sociocultural origins of the evolution of the concept of "digital art".

19. Aesthetic possibilities of various types of digital art.

20. Basic principles of the creation of the subject of art by means of digital art.

21. Types of digital art.

2.2. "Project activity"

1. The structure of the project activity and its category.

2. Intents and objectives of the method of artistic design.

3. Features of compositional shaping in artistic design.

4. Functions of a thing - instrumental, adaptive, efficient, integrated.

5. The morphology of a thing and the role of spatial structure.

6. Features of the technological form of a thing and technological image of a thing.

7. Stages and characteristics the process of artistic design.

8. Criticism and evaluation of project' activities.

9. List and characterize the methods of artistic design.

10. Ergonomic providing of designing process.

11. Features of design-graphic modeling.

12. Types of models and their functions.

13. The role of digital arts in modern designing of environ.

14. The role of digital arts in the modern designing of museums and expositions.

2.3 Scientific research in the design sphere

1. Types of scientific research in the design and digital arts fields.

2. General methods of scientific research in the design and digital arts fields.

3. Special methods of scientific research in the design and digital arts fields.

4. Structure of scientific works in the design and digital arts fields.

5. Requirements for scientific research arrangement and registration.

3. Example of an exam test

TEST OF ENTRANCE EXAM IN DESIGN

MODULE I. HISTORY OF DESIGN

1. Name the time of occurrence of the design:

a) middle of the first millennium A.D.

b) mid 15th century;

c) mid 19th century;

d) mid 18th century;

d) mid 20th century.

2. Choose the right reasons for the occurrence of design:

a) collapse of the colonial system;

b) development of fine art;

c) mass machine-made manufacture;

d) occurrence of international corporations;

e) urbanization of cities.

3. Select the great inventions of the first half 19th century:

a) Russian locomotive of father and son Cherepanovs;

b) typography;

c) a bicycle;

d) earthmoving machine;

e) photography.

4. Name the date of the first World Industrial Exhibition in London:

a) 1812;

b) 1914;

c) 1851;

d) 1928;

e) 1903.

5. What is interactivity?

a) virtual computer program;

b) a concept that reveals the nature and degree of interaction between objects or subjects;

c) an object or state that does not really exist, but can arise under certain conditions of computer reality.

6. What are the distinctive features of functionalism in architecture and design:

a) simplicity;

b) patterned;

c) geometry;

d) clarity;

e) multicolor.

7. Who is the author-developer of the presented design object?

a) Kazimir Malevich;

b) Auguste Rodin;

c) Walter Gropius;

d) Alexander Rodchenko;

d) Peter Behrens.

8. What types of digital arts do you know?

a) the painting;

b) designer's designing;

c) video mapping;

d) digital painting;

e) 3D sculpture.

9. The concept of organic design is based on the following provisions:

a) the abolition of the boundaries between expensive works of art and serial industrial things;

b) individual elements of the environment should visually and functionally fit into the interior of the room;

c) the principles of combinability and interchangeability;

d) conveying the essence of nature;

e) a building must be fit in the surrounding locality.

10. Read the description of the activities of one of the designers' groups. Choose its name.

The group was founded in 1966 in Florence by four architects: Andrea Branzi, Massimo Morozzi, Paolo Deganello, Gilberto Corretti and two designers Dario Bartolini and Lucia Bartolini. The group, rejecting the ideas of rationalism, tried to replace the traditional city with a new superstructure, where architecture should become non-functional, self-destructive, symbolic. In 1972, they proclaimed: "the right to oppose reality, which lacks sense" ... to act, change, shape and destroy the environment.

a) Memphis;

b) Alchemy;

c) Archizoom;

d) Werkbund.

MODULE II. THEORY OF DESIGN

11. Select the complete design definition:

a) Design is a specific type of project activity that brings together artistic and substantive creativity and scientifically based engineering practice in the industrial production sphere;

b) Design – design activities for the development of industrial products with high consumer properties and aesthetic qualities, the formation of a harmonious objective environment of the residential, industrial and socio-cultural spheres;

c) Design – a specific field of activity for the development (design) of the object-spatial environment, as well as life situations in order to give the design results high consumer properties;

d) Design is a creative activity, the purpose of which is to determine the formal qualities of manufactured by industry good to meet the needs of an individual's, a social group or society as a whole;

e) Design is an artistically technical designing activity that unites technical and artistic creativity in its development of industrial products with high consumer properties and aesthetic qualities for industrial production in relatively large series or batches in an industrial way.

12. What kind of computer graphics types can you list?

a) Vector graphics;

b) Project graphic arts;

c) Technical aesthetics;

d) Raster graphics;

e) Fractal graphics.

13. Select the correct definition of the design object:

a) industrial goods, elements of urban, industrial and living environment, visual information, etc.;

b) a part of the real world (environment, process, thing or complex of things, phenomenon, idea), the focus of the designer's attention in the analysis, cognition and transformation purposes;

c) any subject-spatial environment that requires transformation by the utility, convenience, and beauty laws;

d) Any technical industrial product (kit, ensemble, complex, system) in any sphere and peoples livelihoods environment where human communication exist (to a varying degrees);

e) The commonality of the imagery system, means of artistic expression, creative techniques, due to the ideas of the designer.

14. What capabilities does 3D digital sculpture have?

a) The development of 3D objects' construction;

b) Tactile contact possibility;

c) Visualization from various points of view;

d) Rendering of various surfaces and lighting.

15. What is the difference between arts-and-crafts artists and digital designers in their project activity?

a) Developed objects kinds;

b) Used materials kinds;

c) Approaches for the creating objects;

d) Technologies of manufacturing objects;

e) The social and cultural role of objects in the subject surrounding of the person.

16. Match suitable design kinds for the pictures below:

1

2

3

4

a) Industrial design;

b) Environmental design;

c) Design of transport;

d) Graphic design;

e) Clothing design;

f) Digital art.

17. Underline the categories of project activities:

a) The cost of thing;

b) The function of the thing;

c) The morphology of the thing;

d) The design of the thing;

e) The draft design of the thing.

18. Which of the following specialists are part of the expert council for the integrated assessment of a design subject:

a) a sociologist;

b) an engineer;

c) a designer;

d) an economist;

e) a psychologist.

19. Choose the correct definition of "comprehensive designing":

a) - a special kind of project activity, the objects of which are products of industrial and household use, manufactured by industrial methods and relatively large batches;

b) - the general direction and sequence of actions to transform the original technical task into a ready draft;

c) - design of a number of products for mass industrial production;

d) - special designing based on principles consistent with nature;

e) - design of a number of products that fully meet the needs of a concrete process of human activity

20. Computer art is mainly based on three fundamental concepts:

a) Random access - (pseudo) non-deterministic, algorithms based on instructions open the possibility of instant access to multimedia elements, that can re-group (shuffle) seemingly endless combinations;

b) Predictability of the aesthetic perception of an object - a figurative beginning has a predictable result due to traditional means of realization;

c) Interactivity - the viewer can take an active part in influencing and changing the piece;

d) Virtuality - a physical object is transformed into a virtual or conceptual object.

MODULE III. STYLE EDUCATION IN THE INTERIOR

21. Choose the most complete definition of the "Digital Art" term:

a) Digital art is a kind of computer art, where implement artistic methods and techniques using digital computer technology (using computer as the main creative (cognitive) tool) ";

b) Digital art is the development of the placement's internal space, consisting in its architectural, artistic and functional design;

c) Digital art is a figurative conceptualization on reality; the process or result of the internal or external (in relation to the creator) world expression in some form; creativity, aimed in a way not only of the author's interests himself reflecting, but others too;

d) Digital art is the mastery of transmitting certain information to a viewer or listener through only one of three - graphics (visual arts), music, dance - media or a combination of these media (multimedia) - theater, ballet, opera, cinema.

22. What are the main qualities of digital art?

a) Conceptuality;

b) Unambiguous interpretation;

c) Technological effectiveness and innovation;

d) Traditional principles use;

e) Lack of emotional response - a rational approach.

23. What kind of digital arts can you see at the picture?

a) digital painting;

b) video mapping;

c) hologram;

d) digital sculpture;

e) installation.

24. Choose the most appropriate definition for style in design:

a) Style is a form of life and activity characterized by the communication, behavior and mindset peculiarities;

b) Style - a set of signs that characterize the art of a certain time, direction or style of an artist;

c) Style is the unity of morphological features that distinguishes the creative manner of an individual master or designer;

d) Style is a collection of methods of the language means use, for expressing one or another ideas, thoughts in various conditions of speech practice;

e) Style is a well-chosen wear, that person's individuality reveals.

25. Select the major historically established art styles:

a) country music;

b) Gothic;

c) baroque;

d) eclecticism;

e) Modern.

26. Can poetry be a digital art?

a) yes;   b) no.

27. What areas comprise in a computer design?

a) Virtual world;

b) Painting and drawing;

c) Development of models and equipment' and instruments' technology;

d) Printing products;

e) Web-design.

28 Highlight the provisions characterizing the style as a social phenomenon in the design:

a) the unity of the image-plastic layer in the works of various arts;

b) a phenomenon when the existing aesthetic norms are accepted by the most part of society;

c) internationality;

d) penetration into all areas of a material culture;

e) a large timeframe of style existence.

29. Define the type of digital art:

a) digital painting;

b) digital photography;

c) fractal;

d) video mapping;

e) hologram.

30. What corresponds to the virtual reality description?

a) no need for special equipment;

b) the absence of material objects;

c) the creation of the subject-spatial environment by traditional means;

d) interactivity of the environment;

e) learning possibility during the game.

MODULE IV. DESIGN RESEARCH METHODOLOGY

31. Select the correct definition of "methodology of design":

a) - it is one of the constituent parts of philosophy, that studies the fundamental principles of being;

b) - this is a teaching about the structure and rational organization of methods and means of designer's activity, the highest step of the development of methodic in design;

c) - this is a science about the organization and regulation of the cognition' process or practical transformation of an object;

d) it is the science of the principles of construction, forms and ways of scientific knowledge;

e) it is a section of philosophy that studies issues related to the emergence and development of values in one or another historical period.

32. Highlight the main design's method:

a) project and graphical modeling;

b) prototypical method;

c) bionic method;

d) trial and error method;

e) artistic and figurative modeling.

33. What research is carried out in the design's field:

a) marketing research;

b) sociological research;

c) art history research;

d) ergonomic research;

e) ethnological research.

34. Which design phase always contains a research component:

a) project development;

b) the formation of draft design;

c) reflection on the problem situation;

d) pre-project analysis;

e) design of the project's exposition.

35. Name the main empirical methods of scientific research:

a) observation;

b) classification;

c) measurement;

d) visualization;

e) experiment.

36. What the hypothesis of research is?

a) the analysis of bibliographic sources;

b) the assumption;

c) the novelty of the statements;

g) the sequence of the experiment;

e) the implementation of the analysis.

37. What research method in the table below is visualized?

	Job type	1st task group in complexity	2nd task group in complexity	3rd task group in complexity
1	Consolidating knowledge and skills to build three types of parts	Tasks for the construction of three types of axonometric details	The task to build a third type of two given	Task for the re-construction of the shape of the object
2	Consolidation of knowledge and skills to build sections	Tasks for the construction of sections on the axonometric projection of the part.	The task for the reconstruction of the shape of the object on the specified sections	The task to transform the shape of the object and the implementation of sections
3	Consolidation of knowledge and skills to build sections	The task of building cuts along axonometric projections of the part.	The task of building cuts in three types	The task to perform the transformation of the shape of the object and implementation of cuts

a) analysis;

b) systematization;

c) ranging;

d) classification;

e) comparison.

38. What of the listed one need you to make a comparison in the research?

a) analysis;

b) criteria;

c) analytical models;

d) classification;

d) mathematical methods.

39. What research topics belongs to the design' field?

a) equipment and interior content filling for the kindergarten play rooms;

b) conditions for improving the aesthetic qualities of the interior of a boarding house for the disabled and retirees

c) research on the impact of marketing campaigns for increasing of young people's consumer demand;

d) possibilities of using polymer glass in modern architecture;

e) increasing the comfort opportunities of the interior for kindergarten's game-room

The procedure of evaluation of assessments obtained in the state exam in the direction of the preparation of undergraduate into the assessment obtained at the entrance test in the master's course

The evaluation obtained at the state bachelor's examination will be counted as entrance examinations to magistracy.

The result of the state exam	The result of the entrance test[2]
5	90+ Average grade of the bachelor's degree
4	70+ Average grade of bachelor's degree
3	49+ Average grade of bachelor's degree

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[2] Rounded to a whole number

Application form for registration of individual achievements of the applicant

Chairman of the examination Committee

_____

(Code and direction names
(Name of master's program))

_____

Full name of the applicant (in full)

Statement

I inform you that I have the following individual achievements. The relevant documents are attached.

Name of achievements	number of points	Documents confirming individual achievement	✓ Availability Mark
The presence of a diploma of higher education with honors	**5**	a diploma of higher education with honors	
Availability of publications: An article in publications indexed in Scopus or Web of Science databases with Impact Factor ≥ 1.0; An article in publications indexed in Scopus or Web of Science databases with Impact Factor less than 1.0; An article in publications indexed in Russian science citation index databases;е публикаций:	**up to 10 points** **5** **3** **2**	printed copy of the page of the official Internet re-source of the database indexing the work (for example, Scopus.com, e-library.ru), which displays information about the publication (authors, output, title of the work) and its indexing database (RSCI, Scopus, Wos);	
Presence of an award at a competition of scientific works[3], including at a competition of final qualifying	**3**	Diploma of the winner / Prize-winner (awardee)of the competition of research works	

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[3] awards received at the competitions of presentations, abstracts, photo-video works, scientific games, case competitions (essays, poems, etc.) are excluded; awards at the competitions organized by a commercial organization (PJSC, JSC, JSC, LLC, IP, etc.) are excluded.

Name of achievements	number of points	Documents confirming individual achievement	✓ Availability Mark
works not below the level of the country;			
Availability of patents: for a utility model; on the invention	**up to 7 points** **5** **2**	Patent (certificate) for the invention/ utility model	
Amount of points for individual achievements:			

(date)   (Signature)

DECIDED:

Full name of the applicant(in full)

To charge/not to accrue additional _____ (_____) points for the presented individual achievements.

Chairman of the examination Committee

/

(Signature)   (Date)

Members of the examination Committee

/

(Signature)   (Date)

/

(Signature)   (Date)

/

(Signature)   (Date)