

# BUNIN YELETS STATE UNIVERSITY

Director of the Institute of Culture, History  
and Law \_\_\_\_\_ I.A. Karpacheva/



## THE WORK PROGRAMME OF THE DISCIPLINE

### B1.C.06.01 Color science and coloristics

**Direction of training:** 44.03.01 *Pedagogical Education*

**Programme:** *Fine Arts*

**Qualification (degree):** *bachelor*

**Mode of study:** *full-time*

**Institute of Culture, History and Law**

**Department:** *Design, art education and technology*

	full-time form	full-time and part-time form	part-time form
Study course	1		
Term	1, 2		

Lectures	18		
Laboratory work			
Seminars (practical work)	54		
Including practical training			
Form(s) of control	Credit test – 1 term Credit test with grade – 2 term		
Control			
Other forms of work			
Independent work	108		

**Total number of academic hours: 180**

**Labour intensity: 5 credits**

*Developer of the work programme:*

*Senior Lecturer Razvodova Yu.A.*

## I. ORGANIZATIONAL AND METHODOLOGICAL SECTION

**The purpose of studying the discipline:** the development of professional competencies in students that contribute to the development of skills to effectively solve artistic and creative problems through the use of the expressive properties of color in future professional activities.

### **Objectives of studying the discipline:**

- Formation of a system of knowledge about the laws of visual perception and the properties of colors;
- Development of artistic vision in the process of creating harmonious color combinations;
- Assistance in the development of skills in using expressive means of color to implement a creative idea.

**The place of the discipline in the structure of the basic professional educational program:** it is implemented within the framework of the basic (compulsory) part of block B1. Disciplines (modules).

### **Planned learning outcomes for the discipline:**

Competence code	Indicators of competence achievement	Planned learning outcomes for the discipline
GPC-6	To know: <ul style="list-style-type: none"><li>– the laws of personality development and manifestation of personality traits, psychological laws of periodization and crises of development;</li><li>– psychological and pedagogical technologies of individualization of training, development, education;</li><li>– psychological and pedagogical foundations of educational activities taking into account the individual characteristics of students;</li><li>– the main patterns of age development, socialization of the individual;</li><li>– indicators of individual characteristics of life trajectories, their possible deviations, as well as the basics of their psychodiagnostics.</li></ul>	Knows: <ul style="list-style-type: none"><li>– patterns of personality development and manifestation of personality traits, psychological laws of periodization and crises of development;</li><li>– psychological and pedagogical technologies of individualization of teaching fine arts, development, education;</li><li>– psychological and pedagogical foundations of educational activities taking into account the individual characteristics of students;</li><li>– basic patterns of age development, socialization of personality;</li><li>– indicators of individual characteristics of life trajectories, their possible deviations, as well as the basics of their psychodiagnostics.</li></ul>
	To be able to: <ul style="list-style-type: none"><li>– use knowledge about the developmental characteristics of students in planning and organizing</li></ul>	Is able to: <ul style="list-style-type: none"><li>– use knowledge about the developmental characteristics of students when planning and</li></ul>

	<p>educational and upbringing work;</p> <ul style="list-style-type: none"> <li>– apply educational technologies for individualization of training, development, education;</li> <li>– compile (jointly with a psychologist and other specialists) a psychological and pedagogical characteristic (portrait) of the student's personality;</li> <li>– build educational activities taking into account the cultural differences of children, gender, age and individual characteristics.</li> </ul>	<p>organizing educational work;</p> <ul style="list-style-type: none"> <li>– apply educational technologies for individualization of teaching fine arts, development, education;</li> <li>– compile (jointly with a psychologist and other specialists) a psychological and pedagogical characteristic (portrait) of the student's personality;</li> <li>– build educational activities taking into account the cultural differences of children, gender, age and individual characteristics.</li> </ul>
	<p>To possess:</p> <ul style="list-style-type: none"> <li>– actions of taking into account the developmental characteristics of students in conducting individual educational activities;</li> <li>– actions of using educational technologies in professional activities for individualization of training, development, education, including students with special educational needs;</li> <li>– actions of providing targeted assistance to students, including those with special educational needs;</li> <li>– actions of developing (jointly with other specialists) and implementing, together with parents (legal representatives), programs for the individual development of the child;</li> <li>– techniques for understanding the content of documentation of specialists (psychologists, defectologists, speech therapists, etc.) and its use in work.</li> </ul>	<p>Possesses:</p> <ul style="list-style-type: none"> <li>– actions to take into account the developmental characteristics of students when implementing individual educational activities in the field of training "Fine Arts";</li> <li>– actions to use educational technologies in professional activities for the individualization of training, development, education, including students with special educational needs;</li> <li>– actions to provide targeted assistance to students, including those with special educational needs;</li> <li>– actions to develop (jointly with other specialists) and implement, together with parents (legal representatives), programs for the individual development of the child;</li> <li>– techniques for understanding the content of documentation from specialists (psychologists, defectologists, speech therapists, etc.) and its use in work.</li> </ul>
GPC-7	<p>To know:</p> <ul style="list-style-type: none"> <li>– laws and features of building interactions between participants in educational relations;</li> <li>– basic patterns of family relations that allow for effective work with the parent community;</li> <li>– patterns of formation of children-adult communities, their socio-psychological characteristics and patterns of development of</li> </ul>	<p>Knows:</p> <ul style="list-style-type: none"> <li>– patterns and features of the construction of interactions of participants in educational relations in teaching fine arts;</li> <li>– basic patterns of family relations that allow effective work with the parent community;</li> <li>– patterns of formation of children-adult communities, their socio-psychological characteristics and</li> </ul>

	children's and adolescent communities.	patterns of development of children's and adolescent communities.
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>– select forms, methods, techniques of interaction with different participants in the educational process (students, parents, teachers, administration) in accordance with the context of the situation;</li> <li>– cooperate with other teaching staff and specialists in solving educational problems.</li> </ul>	<p>Is able to:</p> <ul style="list-style-type: none"> <li>– select forms, methods, and techniques of interaction with various participants in the educational process (students, parents, teachers, administration) in accordance with the context of the situation;</li> <li>– collaborate with other teaching staff and specialists in solving educational problems in the field of fine arts.</li> </ul>
	<p>To possess:</p> <ul style="list-style-type: none"> <li>– actions to identify behavioral and personal problems of students related to the peculiarities of their development;</li> <li>– actions to interact with other specialists within the framework of a psychological, medical and pedagogical council;</li> <li>– skills of building (or constructing) interactions with different participants in educational relations (students, parents, teachers, administration) within the framework of the implementation of educational programs.</li> </ul>	<p>Possess:</p> <ul style="list-style-type: none"> <li>– actions to identify behavioral and personal problems of students related to the peculiarities of their development;</li> <li>– actions to interact with other specialists within the framework of a psychological, medical and pedagogical council;</li> <li>– skills in building (or constructing) interactions with various participants in educational relations (students, parents, teachers, administration) within the framework of the implementation of educational programs in fine arts.</li> </ul>
GPC-8	<p>To know:</p> <ul style="list-style-type: none"> <li>– special, including subject and methodological scientific knowledge;</li> <li>– the basics of pedagogical activity of a subject teacher (according to the profile of the educational program).</li> </ul>	<p>Knows:</p> <ul style="list-style-type: none"> <li>– special, including subject and methodological scientific knowledge on fine arts;</li> <li>– fundamentals of pedagogical activity of a subject teacher in the profile of the educational program "Fine Arts".</li> </ul>
	<p>To be able to:</p> <ul style="list-style-type: none"> <li>– use modern technologies and methods of organizing class and extracurricular activities;</li> <li>– use traditional and modern forms and methods of educational work, including in the subject area.</li> </ul>	<p>Is able to:</p> <ul style="list-style-type: none"> <li>– use modern technologies and methods of organizing class and extracurricular activities;</li> <li>– use traditional and modern forms and methods of educational work, including in the subject area of "Fine Arts".</li> </ul>
	<p>To possess:</p> <ul style="list-style-type: none"> <li>– skills in organizing various types and forms of classes taking into account the specifics of the subject</li> </ul>	<p>Possess:</p> <ul style="list-style-type: none"> <li>– skills and abilities in organizing various types and forms of classes taking into account the specifics of</li> </ul>

	area; – actions in organizing various types of extracurricular activities: play, educational and research, artistic and productive, cultural and leisure.	the subject area "Fine Arts"; – actions to organize various types of extracurricular activities: play, educational and research, artistic and industrial, cultural and leisure.
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## II. CONTENT AND SCOPE OF THE DISCIPLINE

indicating the number of hours allocated for contact work of students with the teacher (by type of class) and for independent work

### Full-time education

№	Name of sections and topics	Total	Classroom lessons			Ind. work.
			Lec.	Sem. (pract.)	Lab.	
	<b>Section 1. Theoretical foundations of color science</b>	<b>72</b>	<b>18</b>	<b>18</b>		<b>36</b>
1.	<b>Topic 1.</b> Color science and coloristics as a science. History of color studies. Mixing, perception and reproduction of colors. Functions of color.	12	3	3		6
2.	<b>Topic 2.</b> Illusions associated with the structural features of the eye.	12	3	3		6
3.	<b>Topic 3.</b> Modern teaching on color perception. The structure of the eye and color perception.	12	3	3		6
4.	<b>Topic 4.</b> Chromatic and achromatic colors.	12	3	3		6
5.	<b>Topic 5.</b> Achromatic colors. Composing three-tone achromatic compositions.	12	3	3		6
6.	<b>Topic 6.</b> Making a color wheel, whitened and shadow rows.	12	3	3		6
	<i>Credit test</i>					
	<i>Total for 1 term</i>	<i>72</i>	<i>18</i>	<i>18</i>		<i>36</i>
	<b>Section 2. Color as a means of composition.</b>	<b>108</b>		<b>36</b>		<b>72</b>
7.	<b>Topic 7.</b> Color as a means of composition. Color contrast. Shadow, color, reflex.	12		6		12
8.	<b>Topic 8.</b> Implementation of monophonic harmonic relationships.	12		6		12
9.	<b>Topic 9.</b> The concept of related, related-contrasting, contrasting colors. Harmonization of color combinations. Theory of harmonious color combinations.	12		6		12
10.	<b>Topic 10.</b> Creating compositions based on a combination of related, related-contrasting and contrasting-complementary colors.	12		6		12

11.	<b>Topic 11.</b> Texture and color. The role of surface texture in color perception.	12		6		12
12.	<b>Topic 12.</b> Color sketches of fabrics of different textures.	12		6		12
	<i>Credit test with grade</i>					
	<i>Total for 2 term</i>	<i>108</i>		<i>36</i>		<i>72</i>
	<b>Total number of academic hours:</b>	<b>180</b>	<b>18</b>	<b>54</b>		<b>108</b>

### **Part-time and part-time education (not implemented)**

### **Part-time education (not implemented)**

## **III. EVALUATION MATERIALS FOR CONDUCTING CURRENT AND INTERIM CERTIFICATION OF STUDENTS IN THE DISCIPLINE**

Current certification is carried out in the form of a test, abstracts, creative assignments, etc.

### **Standard version of the test (in traditional form)**

1. History of color studies.
2. Theory of color mixing by M.V. Lomonosov.
3. Modern ideas about color perception.
4. Properties of achromatic colors.
5. Properties of chromatic colors.

### **Standard version of the test**

#### **1. White light represents:**

- a) a group of molecules;
- b) a stream of waves of different lengths;
- c) a visual illusion.

#### **2. A physicist who first systematized colors into a color chart:**

- a) I. Newton;
- b) M.V. Lomonosov;
- c) G. Helmholtz.

#### **3. The following are not considered intrinsic qualities of color:**

- a) saturation;
- b) lightness;
- c) color spot configuration.

#### **4. A pair of contrasting colors that are achromatic:**

- a) white – blue;
- b) red – green;
- c) white – black.

#### **5. Irradiation is:**

- a) illusory change in the size of a color spot on a contrasting background;
- b) illusory change in color shade;
- c) illusory change in the configuration of a color spot.

**6. Complementary colors are located:**

- a) in one quarter of the color wheel;
- b) in half of the color wheel;
- c) at opposite ends of the color wheel diameter.

**7. Achromatic colors are formed by optical mixing:**

- a) unsaturated colors;
- b) complementary colors;
- c) nuanced shades.

**8. A color characteristic that associatively**

- a) color temperature;
- b) saturation;
- c) lightness.

**9. Establish a correspondence between the temperature characteristics of color and color shades.**

- |                   |                 |
|-------------------|-----------------|
| a. Warm colors    | A. Red          |
|                   | B. Orange       |
|                   | C. Light Blue   |
|                   | D. Purple       |
| b. Cool colors    | E. Yellowgreen  |
|                   | F. Lemon yellow |
|                   | G. Green        |
| c. Neutral colors | J. Blue         |
|                   | K Brown         |
|                   | J. Blue         |
|                   | K Brown         |
|                   | L. Violet       |

**10. Complete the definition.**

The combination of shades in a color composition is

**11. Establish a correspondence between color shades and human feelings.**

- |                 |                                     |
|-----------------|-------------------------------------|
| a. Black        | 1. Silence, peace                   |
| b. Dark gray    | 2. Sublimity, striving upwards      |
| c. Medium gray  | 3. Balance, hope                    |
| d. Light green  | 4. Joy, cheerfulness, delight       |
| e. Dark green   | 5. Energy, enthusiasm, uplift       |
| f. Red          | 6. Anxiety, worry                   |
| g. Orange       | 7. Dejection, depression            |
| h. Yellow       | 8. Lightness, tenderness            |
| i. Bright green | 9. Serenity, uncertainty            |
| j. Light blue   | 10. Fatigue, lethargy, hopelessness |
| k. Blue         | 11. Bitterness, loneliness, fear    |

**12. Decipher the abbreviation of the RGB color model.**

RGB is an abbreviation of English words...

**13. Complete the sentence.**

The limits of wavelengths of the visible spectrum of electromagnetic radiation...

**14. Enter the names of the color shades**

A ray of light refracted through a triangular prism is decomposed into

**Sample topics for creative assignments**

1. Create a composition using colors of the mid-gray range.
2. Create a composition using colors of the full light range.
3. Create a composition based on a monochromatic harmony of colors.

**Sample topics for abstracts**

1. The mechanism of color perception. Anatomy and physiology of the eye.
2. Changes in the concept of color in historical development.
3. The theory of color mixing by M.V. Lomonosov.
4. Research in the field of color sensations by T. Jung.
5. Experiments by G. Hemholtz and D. Maxwell.
6. The influence of medicine on the study of color (19th century).
7. The theory of color movement in space by V.V. Kandinsky.
8. Color body and color ball.
9. Color system by M.V. Matyushin.
10. The role of color in the organization of composition.
11. The theory of harmonic color combinations by V. Kozlov.
12. Compositional properties of color.
13. Color and national characteristics of costume.
14. Optical illusions and their use in costume design.

Interim assessment of students is carried out in the form of a credit test, a credit test with a grade using the following assessment materials: list of questions for a credit test, list of questions for a credit test with grade

**List of questions for the credit test  
(1 term, full-time education)**

1. "Color science" as a science.
2. History of color studies.
3. Basic characteristics of color.
4. Achromatic and chromatic colors.
5. Illusions associated with the structural features of the eye.
6. Features of perception of complex objects.
7. Methods of conveying the general tone of a work of art.
8. Light range of achromatic tones.
9. Color mixing.
10. Color groups and color intervals.

**List of questions for the credit test with a grade**



### **(2nd term, full-time education)**

1. Dependence of color on the nature of lighting.
2. Theory of harmonic color combinations.
3. Color contrast.
4. Monochrome harmonic combinations.
5. Harmonic combinations of related colors.
6. Harmonic combinations of related-contrasting colors.
7. Harmonic combinations of contrasting and complementary colors.
8. Modern theory of color perception.
9. Color symbolism.
10. Historical, national, age functions of color.
11. Association - the basis of the psychological impact of color.
12. National color catalog.
13. Texture and color.
14. Ornament and color.
15. Ratio of areas of color spots.
16. Harmony of the color composition of the costume.

## **IV. LIST OF REFERENCES REQUIRED FOR MASTERING THE DISCIPLINE**

### **4.1. Main literature**

1. Omelyanenko, E. V. Color Science and Coloristics: a textbook / E. V. Omelyanenko. - 5th ed., corrected. and add. - St. Petersburg: Planet of Music, 2022. - 112 p. - ISBN 978-5-507-44479-3. - Text: electronic // Lan: electronic library system. - URL: <https://e.lanbook.com/book/247661> (date of access: 02 April 2024). - Access mode: for authorized users.

### **4.2. Additional literature**

1. Dragunova, E. P. Color science and coloristics: a tutorial / E. P. Dragunova, O. A. Ziyabneva, E. I. Popov. - Moscow: RTU MIREA, 2021. - 82 p. - Text: electronic // Lan: electronic library system. - URL: <https://e.lanbook.com/book/182584> (date of access: 02 April 2024). - Access mode: for authorized users.

## **V. LIST OF RESOURCES OF THE INFORMATION AND TELECOMMUNICATION NETWORK "INTERNET" REQUIRED FOR MASTERING THE DISCIPLINE**

<b>№</b>	<b>Link to information resource</b>	<b>Name of the development in electronic form</b>	<b>Availability</b>
1.	<a href="http://edu.ru/">http://edu.ru/</a>	<b>Russian Education: Federal Portal.</b> Includes links to portals and websites of educational institutions; state educational standards; regulatory documents; catalog of excursions and educational	Free access

		programs.	
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## **VI. MODERN PROFESSIONAL DATABASES AND INFORMATION REFERENCE SYSTEMS**

1.	<a href="http://www.biblioclub.ru">http://www.biblioclub.ru</a>	Electronic library system (ELS) University library online	Registration via the university computer. In the future, unlimited individual access is provided from any point where there is access to the Internet.
2.	<a href="https://e.lanbook.com/">https://e.lanbook.com/</a>	Electronic library system (ELS) Lan	Registration via the university computer. In the future, unlimited individual access is provided from any point where there is access to the Internet.

## **VII. LICENSED AND FREELY DISTRIBUTABLE SOFTWARE**

The following licensed and freely distributed software is used in the implementation of the academic discipline:

- Microsoft Windows;
- Microsoft Office;
- LibreOffice and others.

## **VIII. EQUIPMENT AND TECHNICAL TEACHING AIDS REQUIRED FOR THE IMPLEMENTATION OF THE EDUCATIONAL PROCESS IN THE DISCIPLINE**

Classes are held in classrooms equipped with specialized furniture, including stationary or portable technical teaching aids (projector, screen, computer/laptop).

Independent work is carried out in rooms equipped with computers with the ability to connect to the Internet and provide access to the electronic information and educational environment of the university.