


MINISTRY OF HEALTH PROTECTION OF UKRAINE  
ODESSA NATIONAL MEDICAL UNIVERSITY  
FACULTY OF DENTISTRY  
DEPARTMENT OF ORTHOPEDIC DENTISTRY



METHODOLOGICAL DEVELOPMENT  
TO PRACTICAL LESSONS  
FROM EDUCATIONAL DISCIPLINE

Faculty of dentistry, course 5

Educational discipline: **Fundamentals of aesthetic dentistry**

Approved:  
Meeting of the Department of Orthopedic  
Dentistry of ONMedU  
Protocol № 11 of "30" June 2023 year.  
Chief of the department  Pavlo Rozhko

Developers:

Chief of the department, prof., doctor of medicine P.D. Rozhko

Assoc. Doctor of Medicine Balikov.V.V

Assoc. Doctor of Medicine Burdeyny V.S.

Assoc. Doctor of Medicine Rozumenko M.V.

Assoc. Doctor of Medicine Shakhnovsky I.V.

Assoc. Doctor of Medicine Rozumenko V.O.

Ass. Cherednychenko A.V.

Ass. Lysenko V.V.

Ass. Nazarov O.S.



## **PRACTICAL LESSON No. 1**

**Topic: Articulatory balance. Bilateral body structure Formation and replacement of tooth rows. Functional principles of modeling teeth and dental rows. Smile design. Mimic and masticatory musculature as factors of aesthetic formation.**

**Goal:** Acquaint applicants with the concepts of articulatory balance, bilateral body structure, and smile design.

**Basic concepts:** articulation, balance, bilateral, aesthetics, cosmetics.

**Equipment:** Computer, multimedia projector, phantoms.

### **Plan:**

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

- Human anatomy.
- Anatomy of the maxillofacial system.
- Anatomy of molar teeth.

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

**Articulatory balance:** This is an important aspect for the proper functioning of our chewing apparatus. Articulation determines how the teeth contact each other during chewing and speaking. Balance in articulation helps to avoid problems with teeth and jaws.

**Bilateral body structure:** Our body has a symmetrical structure - the left and right parts have similar structures. This also applies to our face and teeth.

**Formation and replacement of tooth rows:** Teeth shape our smile and affect our overall health. Replacing missing teeth can be important to maintain functionality and aesthetics.

**Functional principles of modeling teeth and dental rows:** When modeling teeth, their functional features, as well as aesthetic aspects, are taken into account. Modeling helps achieve a harmonious look and proper function. Let's look at some key aspects of this process:

**The shape of the teeth:** When modeling teeth, their shape is taken into account. The teeth should be symmetrical, match the overall face and have a natural appearance.

**Dentition:** It is important to determine the optimal position of the teeth in the oral cavity. This includes proper alignment, distance between the teeth and their interaction during chewing.

**Color and texture:** The modeling also takes into account the color and texture of the teeth. The teeth should look natural and harmonious.

**Replacement of missing teeth:** If teeth are missing, they can be replaced with dentures or implants. This helps maintain functionality and aesthetics.

**Chewing function:** Correct modeling of the teeth helps ensure effective chewing function. The teeth should contact each other correctly when chewing food.

**Aesthetics of a smile:** Teeth are an important part of our smile. Modeling helps to achieve a beautiful, natural smile.

**Smile design:** A smile is our face, and the design of a smile includes the shape and position of the teeth, lips and mucous membrane. It affects the overall look and feel. Here are some key points related to smile design:

**The shape of the teeth:** The shape of the teeth plays an important role in the appearance of a smile. The teeth should be symmetrical, evenly spaced and fit the overall face.

**Color of teeth:** White teeth are a sign of health and youth. It is important to take care of their natural white color.

**Dentition:** The teeth must be properly aligned and have an optimal position. This affects aesthetics and functionality.

**Lips and mucous membrane:** Lips are also important for a smile. They should be of a natural shape and not interfere with the visibility of the teeth.

**Symmetry and proportions:** A harmonious smile takes into account the symmetry and proportions between the teeth, lips and face.

**Replacement of missing teeth:** If teeth are missing, they can be replaced with dentures or implants. This helps maintain aesthetics and functionality.

**Mimic and masticatory muscles:** The muscles of the face and jaw are responsible for movements during chewing, speech and facial expressions. Their correct operation is important for aesthetic formation.

These aspects interact with each other, and studying them helps dentists provide our smile with beauty, health and functionality.

### 3. Summary:

- Articulation balance.
- Bilateral body structure
- Formation and replacement of tooth rows.
- Functional principles of modeling teeth and dental rows.
- Smile design.
- Mimic and masticatory musculature as factors of aesthetic formation.

5. List of recommended literature (main, additional, electronic information resources):

Main:

1. Aesthetic accents of dentistry: manual/M.Ya. Nidzelskyi, E.H. Shiyan, H.M. Davydenko. – Vinnytsia: New book, 2016.-208 p.: illustrations

Additional:

1. Shmidzer Y. Aesthetic dentistry Color atlas .-GalDent, 2005.-312 p., 952 illustrations.

2. King M.D. Clinical and laboratory features of the production of metal-ceramic dental prostheses / Korol M.D., Ramus M.O. – Vinnytsia: New book, 2005. - 272 p.

3. Materials science in dentistry; under the editorship Prof. M.D. the king - Vinnytsia: New book. 2008.-240 p.

4. Vlasenko A.Z. Technology of manufacturing dental prostheses using ceramic and composite materials; under the editorship Prof. Flisa P.S. / Vlasenko A.Z., Strelkovsky K.M. - K.: Zdorovya, 2005. - 164 p.

Electronic information resources

1. State Expert Center of the Ministry of Health of Ukraine <http://www.dec.gov.ua/index.php/ua/>

2. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

3. National Library of Ukraine named after V.I. Vernadsky <http://www.nbuv.gov.ua/>

## **PRACTICAL LESSON No. 2**

**Topic: Architectural beauty of the face. Maxillofacial area. Chewing apparatus and dental-jaw system. The human body and the golden ratio. Face proportions. Aesthetic problems of different age groups.**

**Goal:** Acquaint applicants with the concepts of architectural beauty of the face, maxillofacial area, masticatory apparatus and dento-maxillary system, human body and golden ratio, facial proportions, aesthetic problems of different age groups.

**Basic concepts:** facial beauty, maxillofacial area, aesthetics, golden ratio.

**Equipment:** Computer, multimedia projector, phantoms.

### **Plan:**

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

- Anatomy of the maxillofacial area
- Chewing apparatus
- Anatomy of the human body

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

**Architectural beauty of the face** is an important aspect that unites dentistry and aesthetics. Let's review some key concepts and aspects related to the face, the maxillofacial region and the maxillofacial system:

**Maxillofacial area:** This area includes the jaws, face, lips, tongue and oral mucosa. It is important for the functions of chewing, speaking and expressing emotions.

**Chewing apparatus:** The masticatory apparatus includes teeth, jaws, masticatory muscles and joints. It is responsible for chewing food and maintaining the structure of the face.

**Golden Ratio:** This is a mathematical ratio used to determine ideal facial proportions. The golden ratio can be used to plan aesthetic procedures. It is based on the number 1.618 (approximately), known as the golden number or phi.

Here are some examples of how the golden ratio applies to different parts of the body:

**Face:** Ideal facial proportions include the distance between the eyes, nose and lips. For example, the distance from the upper edge of the nose to the lower edge of the chin should be about 1.618 times greater than the distance between the eyes.

**Body:** The golden ratio can also be applied to the relationship between height and arm or leg length. For example, the length of the shoulder to the elbow should be about 1.618 times greater than the length of the elbow to the wrist.

**Art and architecture:** The golden ratio is used in art and architecture to create harmonious proportions. For example, the ratio of the sizes of windows, doors and other details of buildings can correspond to the golden ratio.

**Face proportions:** Ideal facial proportions include the relationship between different parts, such as the distance between the eyes, nose and lips. This is important to create a harmonious look.

**Aesthetic problems of different age groups:** Different age groups may have different aesthetic problems, such as tooth loss, changes in facial shape with age, and others. Dentistry and cosmetic procedures can help solve these problems.

4. Summary of results:

- Architectural beauty of the face.
- Maxillofacial area.
- Chewing apparatus and dental-jaw system.
- The human body and the golden ratio.
- Proportions of the face.
- Aesthetic problems of different age groups.

5. List of recommended literature (main, additional, electronic information resources):

Main:

1. Aesthetic accents of dentistry: manual/M.Ya. Nidzelskyi, E.H. Shiyan, H.M. Davydenko. – Vinnytsia: New book, 2016.-208 p.: illustrations

Additional:

1. Shmidzer Y. Aesthetic stomatology Color atlas .-GalDent, 2005.-312 p., 952 illustrations.

2. King M.D. Clinical and laboratory features of the production of metal-ceramic dental prostheses / Korol M.D., Ramus M.O. – Vinnytsia: New book, 2005. - 272 p.

3. Materials science in dentistry; under the editorship Prof. M.D. the king - Vinnytsia: New book. 2008.-240 p.

4. Vlasenko A.Z. Technology of manufacturing dental prostheses using ceramic and composite materials; under the editorship Prof. Flisa P.S. / Vlasenko A.Z., Strelkovsky K.M. - K.: Zdorovya, 2005. - 164 p.

Electronic information resources

1. State Expert Center of the Ministry of Health of Ukraine  
<http://www.dec.gov.ua/index.php/ua/>

2. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

3. National Library of Ukraine named after V.I. Vernadsky  
<http://www.nbuv.gov.ua/>

### **PRACTICAL LESSON No. 3**

**Topic: Concept of the terms "cosmetics" and "aesthetics". Elements of aesthetic culture. Aesthetic dentistry. The history of dental aesthetics.**

**Goal:** Acquaint applicants with the concepts of: the terms "cosmetics" and "aesthetics". Elements of aesthetic culture. Aesthetic dentistry. The history of dental aesthetics.

**Basic concepts:** cosmetics, aesthetics, culture, dentistry.

**Plan:**

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

- The history of dentistry

- The concept of "culture"

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

Culture is a set of material and spiritual values created by mankind throughout its history. It includes a historically acquired set of rules within society for its preservation and harmonization. Culture is a complex system of being that combines science, art, morality, way of life and worldview.

The word "culture" comes from the Latin word "cultura", which literally means "cultivation" or "to process". In classical antiquity, it was first recorded in the work of Marcus Porcius Cato the Elder "Deagricultura" (III century BC), dedicated to the concerns of the landowner who cultivated the land with the use of slave labor. Concerns corresponded to the spirit of the time: the author recommended keeping slaves beyond starvation, overloading them with work without measure, in order to prevent theft and frivolous activities.

Culture is studied by a complex of humanities, such as cultural studies, ethnography, cultural anthropology, sociology, psychology, and history. It determines our values, way of thinking, interaction and perception of the world around us. Culture is not only a legacy of the past, but also a living process that is constantly changing and developing.

Aesthetics is a philosophical science that studies the nature of aesthetic consciousness and is the science of the beautiful. It explores sensory knowledge of the world, contemplative or creative attitude of a person to reality. Aesthetics studies a peculiar experience of mastering the surrounding reality, during which the subject feels a state of spiritual and sensual euphoria, elation, joy, catharsis, spiritual pleasure and other emotions. Man feels his organic involvement in the Universe and his own essence inseparable from the First Cause, God.

Aesthetics covers not only questions related to the nature of beauty, but also general aspects of appreciation of art objects. It helps define what makes a work of art good, and how standards for such judgments are set.

Cosmetic dentistry is a branch of dentistry that specializes in restoring and improving the appearance of a patient's teeth and smile. It includes procedures such as teeth whitening, veneers, crowns and other methods that help improve the aesthetic appearance of teeth.

The history of dental aesthetics begins with the development of human consciousness. Art, as a result of the evolution of consciousness, allows us to perceive the world through our senses and create generalized images. Our senses help us navigate our environment, and art emerges from this experience.

Aesthetics is an interesting and deep science that helps us understand the beauty, expression and perception of the world around us.

#### 4. Summary:

- Concept of the terms "cosmetics" and "aesthetics".
- Elements of aesthetic culture.
- Aesthetic dentistry.
- The history of dental aesthetics.



5. List of recommended literature (main, additional, electronic information resources):

Main:

1. Aesthetic accents of dentistry: manual/M.Ya. Nidzelskyi, E.H. Shiyan, H.M. Davydenko. – Vinnytsia: New book, 2016.-208 p.: illustrations

Additional:

1. Shmidzer Y. Aesthetic dentistry Color atlas .-GalDent, 2005.-312 p., 952 illustrations.

2. King M.D. Clinical and laboratory features of the production of metal-ceramic dental prostheses / Korol M.D., Ramus M.O. – Vinnytsia: New book, 2005. - 272 p.

3. Materials science in dentistry; under the editorship Prof. M.D. the king - Vinnytsia: New book. 2008.-240 p.

4. Vlasenko A.Z. Technology of manufacturing dental prostheses using ceramic and composite materials; under the editorship Prof. Flisa P.S. / Vlasenko A.Z., Strelkovsky K.M. - K.: Zdorovya, 2005. - 164 p.

Electronic information resources

1. State Expert Center of the Ministry of Health of Ukraine  
<http://www.dec.gov.ua/index.php/ua/>

2. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

3. National Library of Ukraine named after V.I. Vernadsky  
<http://www.nbuv.gov.ua/>

#### **PRACTICAL LESSON No. 4**

**Topic: Fundamentals of aesthetic analysis. Analysis of the face, oral cavity. Smile, classification. Stages and types of smiles.**

**Goal:** Acquaint applicants with the basics of aesthetic analysis, analysis of the appearance of the face, oral cavity. Smile, classification. Stages and types of smiles.

**Basic concepts:** analysis, smile, face.

**Equipment:** Computer, multimedia projector, phantoms.

**Plan:**

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

- anatomy of the maxillofacial area

- facial muscles

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

**Basics of aesthetic analysis** in dentistry include examinations of the face, oral cavity and smiles. Let's take a closer look at these aspects:



#### 1. Facial analysis:

- When assessing the face, attention is paid to symmetry, proportions and harmony.
- They determine the shape of the face, the location of the eyes, nose, lips and cheeks.
- They evaluate the condition of the skin, the presence of wrinkles, scars and other defects.

#### 2. Analysis of the oral cavity:

- They study the condition of the teeth, gums and mucous membrane.
- The presence of carious defects, dental deposits, the condition of the gums and dental crowns are evaluated.



#### 3. Smile and its classification:

- A smile is an important aspect of facial aesthetics.
- Classification of smiles includes different types of facial expressions such as natural smile, smile with teeth, smile without teeth, etc.
- It is important to take into account the shape of the lips, the protrusion of the teeth and their color range.

#### 4. Stages of smiles:

- **Initial stage:** Determining the shape of the face and identifying possible defects.
- **Stage planning:** Selection of correction and recovery methods.
- **Executive stage:** Application of selected methods.

- **Control stage:** Evaluation of results and correction if necessary.

4. Summary of results:

- Basics of aesthetic analysis.
- Analysis of the face, oral cavity.
- Smile, classification.
- Stages and types of smiles.

5. List of recommended literature (main, additional, electronic information resources):

Main:

1. Aesthetic accents of dentistry: manual/M.Ya. Nidzelskyi, E.H. Shiyan, H.M. Davydenko. – Vinnytsia: New book, 2016.-208 p.: illustrations

Additional:

1. Shmidzer Y. Aesthetic dentistry Color atlas .-GalDent, 2005.-312 p., 952 illustrations.

2. King M.D. Clinical and laboratory features of the production of metal-ceramic dental prostheses / Korol M.D., Ramus M.O. – Vinnytsia: New book, 2005. - 272 p.

3. Materials science in dentistry; under the editorship Prof. M.D. the king - Vinnytsia: New book. 2008.-240 p.

4. Vlasenko A.Z. Technology of manufacturing dental prostheses using ceramic and composite materials; under the editorship Prof. Flisa P.S. / Vlasenko A.Z., Strelkovsky K.M. - K.: Zdorovya, 2005. - 164 p.

Electronic information resources

1. State Expert Center of the Ministry of Health of Ukraine <http://www.dec.gov.ua/index.php/ua/>

2. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

3. National Library of Ukraine named after V.I. Vernadsky <http://www.nbuv.gov.ua/>

## **PRACTICAL LESSON No. 5**

**Topic: Color and optical parameters of the tooth. Factors influencing the restoration of the color gamut. Types and causes of optical illusions. Illusions of color. Creating an illusion in dentistry. Test.**

**Goal:** Acquaint the applicants with the parameters: color and optical parameters of the tooth. Factors influencing the restoration of the color gamut. Types and causes of optical illusions. Illusions of color. Creating an illusion in dentistry.

**Basic concepts:** color, optical parameters, illusion.

**Equipment:** Computer, multimedia projector, phantoms.

**Plan:**

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge:

- Anatomy of teeth
- Color range.

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

The color and optical parameters of the tooth are important aspects in dentistry. Let's look at some key points:

**Tooth color:**

Teeth have different shades, from white to yellow or gray.

Factors that affect tooth color include genetics, age, diet, smoking, and coffee or tea consumption.

**Optical parameters of the tooth:**

**Brightness:** Determined by the light reflection of the tooth. Bright teeth look younger.

**Saturation (chroma):** Displays the intensity of the color. The teeth can be less or more saturated.

**Tone (hue):** Determines the shade of the tooth (yellow, gray, red, etc.).

**Factors affecting the restoration of the color gamut:**

Selection of material for tooth restoration (for example, plastic, ceramic).

Color matching when choosing a restorative material.

**Illusions of color** is a fascinating topic that arises when our eyes and brain perceive colors even where they are not actually there. Here are some interesting facts and types of color illusions:

**Optical illusion "Color square":**

This illusion shows how context can affect the perception of color.

Look at the squares in the center of the image. They are really the same color, but the surrounding colors make them appear different.

**Illusion "Color constant":**

This illusion demonstrates that colors can remain constant despite changes in lighting.

Look at the two areas of the image. They have the same color tone, although they appear different due to context.

**Illusion "Color gradient":**

This illusion shows how our brain perceives color transitions.

Look at the vertical gradient. Although the colors change smoothly, we perceive them as different.

### **Illusion "Color Circle":**

This illusion demonstrates how colors can interact.

Look at the color wheel. It has different sectors, but when we focus on one, the other colors seem to change.

### **Optical illusions in dentistry:**

Illusions can occur due to reflections, shadows and interactions with other teeth.

It is important to consider these factors when restoring teeth.

Creating an illusion in dentistry:

Using appropriate materials and techniques to achieve the desired appearance of teeth.

Consideration of optical parameters to create a natural impression.

#### 4. Summary of results:

- Color and optical parameters of the tooth.
- Factors influencing the restoration of the color range.
- Types and causes of optical illusions.
- Illusions of color.
- Creating an illusion in dentistry.
- Balance.

#### 5. List of recommended literature (main, additional, electronic information resources):

Main:

1. Aesthetic accents of dentistry: manual/M.Ya. Nidzelskyi, E.H. Shiyan, H.M. Davydenko. – Vinnytsia: New book, 2016.-208 p.: illustrations

Additional:

1. Shmidzer Y. Aesthetic dentistry Color atlas .-GalDent, 2005.-312 p., 952 illustrations.

2. King M.D. Clinical and laboratory features of the production of metal-ceramic dental prostheses / Korol M.D., Ramus M.O. – Vinnytsia: New book, 2005. - 272 p.

3. Materials science in dentistry; under the editorship Prof. M.D. the king - Vinnytsia: New book. 2008.-240 p.

4. Vlasenko A.Z. Technology of manufacturing dental prostheses using ceramic and composite materials; under the editorship Prof. Flisa P.S. / Vlasenko A.Z., Strelkovsky K.M. - K.: Zdorovya, 2005. - 164 p.

Electronic information resources

1. State Expert Center of the Ministry of Health of Ukraine  
<http://www.dec.gov.ua/index.php/ua/>

2. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

3. National Library of Ukraine named after V.I. Vernadsky  
<http://www.nbuv.gov.ua/>