

**MINISTRY OF HEALTH PROTECTION OF UKRAINE**

**ODESSA NATIONAL MEDICAL UNIVERSITY**

**Department of Therapeutic Dentistry**

**"APPROVED"**

**Acting vice-rector for scientific and pedagogical work**



**Eduard BURACHKIVSKYI**

**September 1, 2024**

**WORKING PROGRAM  
ELECTIVE EDUCATIONAL DISCIPLINES  
"Fundamentals of aesthetic restoration of teeth"**

**Level of higher education: second (master's)**

**Field of knowledge: 22 "Health care"**

**Specialty: 221 "Dentistry"**

**Educational and professional program: Dentistry**

**2024**

The study program of the academic discipline " Fundamentals of aesthetic restoration of teeth " is based on the educational and professional program "Dentistry" of training specialists of the second (master's) level of higher education in the specialty 221 "Dentistry" of the field of knowledge 22 "Health care", approved by the Scientific Council of ONMedU (protocol No.10 dated June,27 2024).


**Developers:**

head of the department, doctor of medicine, prof. Skiba V.Ya.

Head teacher of the department, PhD in psychology, assoc. prof. S.M. Koval

The program was discussed at the meeting of the department of therapeutic dentistry, protocol No 1 from 27.08. 2024.

**Head of the department**



**Vasyl SKYBA**

**Agreed with the MEP guarantor**

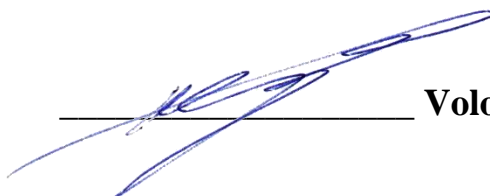


**Anatoly GULYUK**

**Approved by the subject cycle methodical commission for dental disciplines of ONMedU**

**Protocol No. 1 dated 30.08.2024.**

**The head of the subject cycle methodical commission for dental disciplines of ONMedU**



**Volodymyr KRYKLYAS**

**Reviewed and approved at the meeting of the department of**

*Therapeutic and pediatric dentistry*

**Protocol No. 1 of "2" september 2024**

**Head of Department**



*Oksana Dienha*

## 1. Description of the educational discipline:

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
<b>The total number of:</b>  <b>Credits: 3.0</b>  <b>Hours: 90</b>  <b>Content modules: 1</b>	<b>Field of knowledge</b> <b>22 "Health care"</b>	<i>Full-time education</i>
		<i>Compulsory discipline</i>
	<b>Specialty</b> <b>221 "Dentistry"</b>	<i>Year of training: 3</i>
		<i>Semester V,VI</i>
		<i>Lectures (0 hours)</i>
		<i>Seminars (30 hours)</i>
		<i>Practical (0 hours)</i>
		<i>Laboratory (0 hours)</i>
		<i>Independent work (60 hours) including individual tasks (0 hours)</i>
		<i>The form of final control is credit</i>
<b>Level of higher education</b> <b>second (master's)</b>		

## 2. The purpose and tasks of the educational discipline, competences, program learning results.

**The purpose** of studying the discipline "Fundamentals of Aesthetic Dental Restoration" is to acquire theoretical, practical knowledge and skills of a dentist in the field of "Therapeutic Dentistry", which are manifested in the ability to diagnose, treat and prevent the main dental diseases, the formation of clinical thinking and the acquisition of professional competences, preparation a dentist capable of diagnosing and treating dental diseases, providing specialized medical care to patients at a high professional level using modern technologies, tools, and materials.

**The tasks** of studying the discipline "Fundamentals of Aesthetic Dental Restoration" are: mastering the basic theoretical knowledge and practical skills in dental treatment - preparation and filling of carious cavities of I-V classes according to Black, atypical carious cavities, depulped teeth, traumatic lesions of hard dental tissues with modern filling materials, mastering the technologies of tooth restoration, restoration of anatomical integrity and functions of the maxillofacial apparatus, conducting primary and secondary prevention of the most common diseases in the clinic of therapeutic dentistry.

**Competences and learning outcomes**, the formation of which contributes to the discipline (interrelationship with the normative content of the training of higher education applicants, formulated in terms of learning outcomes in the Standard).

According to the requirements of the "Standard of Higher Education of Ukraine", the discipline " Fundamentals of Aesthetic Dental Restoration " ensures that students acquire the following *competencies*:

### **Integral competence:**

The ability to solve typical and complex specialized tasks and problems in the

field of health care / in the specialty "Dentistry", in professional activity or in the learning process, which involves conducting research and/or implementing innovations and is characterized by the complexity and uncertainty of conditions and requirements.

**General competences (GC):**

**GC 1.** Ability to abstract thinking, analysis and synthesis.

**GC 2.** Knowledge and understanding of the subject area and understanding of professional activity.

**GC 3.** Ability to apply knowledge in practical activities.

**GC 7.** Ability to find, process and analyze information from various sources.

**GC 8.** Ability to adapt and act in a new situation.

**GC 9.** Ability to identify, pose and solve problems.

**GC 11.** Ability to work in a team.

**Special competences (SC):**

**SC 1.** Ability to collect medical information about the patient and analyze clinical data.

**SC 2.** Ability to interpret the results of laboratory and instrumental research.

**SC 3.** The ability to diagnose: determine the previous, clinical, final, accompanying diagnosis, emergency conditions.

**SC 4.** Ability to plan and conduct events with prevention of diseases of organs and tissues of the oral cavity and maxillofacial area.

**SC 5.** Ability to design the process of providing medical care: determine the approaches, plan, types and principles of treatment of diseases of the organs and tissues of the oral cavity and maxillofacial area.

**SC 8.** Ability to perform medical and dental manipulations.

**SC 14.** Ability to maintain regulatory medical documentation.

**Program learning outcomes (PLO):**

**PLO 1.** Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using the previous data of the patient's history, the data of the patient's examination, knowledge about the person, his organs and systems, establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease (according to list 2)

**PLO 2.** Collect information about the patient's general condition, evaluate the patient's psychomotor and physical development, the condition of the maxillofacial organs, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 5).

**PLO 3.** Assign and analyze additional (mandatory and optional) examination methods (laboratory, X-ray, functional and/or instrumental) according to list 5, of patients with diseases of organs and tissues of the oral cavity and maxillofacial region for differential diagnosis of diseases (according to the list 2).

**PLO 4.** Determine the final clinical diagnosis in compliance with the relevant ethical and legal norms, by making a reasoned decision and logical analysis of the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis under the control of the head physician in the conditions of a medical institution (according to list 2.1).

PLO 8. Determine the approach, plan, type and principle of treatment of dental disease (according to list 2) by making a reasoned decision according to existing algorithms and standard schemes.

PLO 20. To organize the required level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity

PLO 21. Perform medical manipulations on the basis of a preliminary and/or final clinical diagnosis (according to lists 2, 2.1) for different segments of the population and in different conditions (according to list 6).

PLO 22. Perform medical dental manipulations on the basis of a preliminary and/or final clinical diagnosis (according to lists 2, 2.1) for different segments of the population and in different conditions (according to list 7).

**As a result of studying the academic discipline, the student of higher education must:**

**Know:**

- Indications and contraindications for direct restoration. Stages of direct restoration.
- Necessary tools for preparation of hard tooth tissues and restoration.
- Peculiarities of patient examination at the planning stage of direct tooth restoration.
- Analysis of facial aesthetics and initial clinical situation when planning tooth restoration.
- Concept of tooth color. Principles and methods of choosing restoration color. Reproduction of natural tooth color.
- Planning of direct tooth restoration.
- Professional oral hygiene as a mandatory component during direct tooth restoration.
- Anatomical features of different groups of teeth.
- Stages of restoration with bilaminar technique.
- Features of the biomimetic concept.
- Tooth restoration by stratification technique.
- Medicinal treatment of the carious cavity after preparation of the tooth at the stage of direct restoration.
- Classification of filling materials used for direct tooth restoration. Advantages and disadvantages.
- Adhesion. Concept. Classification and characteristics of adhesive systems.
- Finishing of the tooth during direct restoration.
- Quality criteria of direct tooth restoration.

**Be able:**

- make a diagnosis and carry out therapy of the pathology of the hard tissues of the teeth using the main methods of restoration.
- Conduct an examination of a dental patient, draw up a treatment plan and a photo report.
- Determine the group affiliation of teeth based on morphological features.
- Restore the anatomical shape of tooth crowns from plasticine.
- Conduct preparation for direct composite restoration.

- Conduct isolation of the working field using a rubber dam in various clinical situations.
- Determine the color of the tooth(s).
- Carry out the restoration of a depulped tooth using a photocomposite without a pin method.
- Carry out the finishing of the direct restoration.
- Assess the quality of the restoration.

### 3. The content of the educational discipline

#### «Fundamentals of Aesthetic Dental Restoration»:

**Topic 1.** Concept of aesthetics and aesthetic restoration of teeth. Indications and contraindications for direct and indirect restoration of teeth. Basics of aesthetic analysis of the face, smile, shape of tooth crowns.

**Topic 2.** Microrelief of teeth. Aesthetic properties of the tooth. Optical properties of enamel and dentin. Peculiarities of determining the color of teeth in the dentist's office. Development of a treatment plan. Photo protocol. DSD - Digital Smile Design. Diagnostics.

**Topic 3.** Patient preparation for scheduled dental interventions. Isolation during restoration of frontal and lateral groups of teeth. Using the cofferdam system. Types of cofferdam clamps.

**Topic 4.** Modern methods of processing hard tissues of teeth. Advantages and disadvantages.

**Topic 5.** Adhesion. Concept. Classification and characteristics of adhesive systems. Selection and features of using adhesive systems of different generations depending on the clinical situation

**Topic 6.** Restoring the contact point of frontal and lateral teeth. Restoration of depulped teeth. Aesthetic pin designs.

**Topic 7.** Finishing of the restoration. Contouring, grinding and polishing. Tools. Conducting algorithm.

**Topic 8.** Modern restoration techniques: biomimetic, bilaminar and stratification. Advantages and disadvantages. The technique of direct restoration of different groups of teeth.

#### 4. Structure of the academic discipline:

Titles of topics Number of hours	Titles of topics Number of hours					
	Including everything	Including everything				
		lectures	seminars	practical	laboratory	IW
Topic 1. Concept of aesthetics and aesthetic restoration of teeth. Indications and contraindications for direct and indirect restoration of teeth. Basics of aesthetic	8		2			6

analysis of the face, smile, shape of tooth crowns.					
Topic 2. Microrelief of teeth. Aesthetic properties of the tooth. Optical properties of enamel and dentin. Peculiarities of determining the color of teeth in the dentist's office. Development of a treatment plan. Photo protocol. DSD - Digital Smile Design. Diagnostics.	12		4		8
Topic 3. Patient preparation for scheduled dental interventions. Isolation during restoration of frontal and lateral groups of teeth. Using the cofferdam system. Types of cofferdam clamps.	14		6		8
Topic 4. Modern methods of processing hard tissues of teeth. Advantages and disadvantages.	8		2		6
Topic 5. Adhesion. Concept. Classification and characteristics of adhesive systems. Selection and features of using adhesive systems of different generations depending on the clinical situation	12		4		8
Topic 6. Restoring the contact point of frontal and lateral teeth. Restoration of depulped teeth. Aesthetic pin designs.	10		2		8
Topic 7. Finishing of the restoration. Contouring, grinding and polishing. Tools. Conducting algorithm.	12		4		8
Topic 8. Modern restoration techniques: biomimetic, bilaminar and stratification. Advantages and disadvantages. The technique of direct restoration of different groups of teeth.	14		6		8
<b>Total</b>	90		30		60

## 5. Topics of lectures / seminars / practical / laboratory classes

### 5.1. Topics of lectures

Lectures are not provided.

### 5.2. Topics of practical classes

Practical classes are not provided

### 5.3. Thematic plan of seminar classes

№ з/п	Topic name	Number hours
1	<b>Topic 1.</b> Concept of aesthetics and aesthetic restoration of teeth. Indications and contraindications for direct and indirect restoration of teeth. Basics of aesthetic analysis of the face, smile, shape of tooth crowns.	2
2	<b>Topic 2.</b> Microrelief of teeth. Aesthetic properties of the tooth.	4

	Optical properties of enamel and dentin. Peculiarities of determining the color of teeth in the dentist's office. Development of a treatment plan. Photo protocol. DSD - Digital Smile Design. Diagnostics.	
3	<b>Topic 3.</b> Patient preparation for scheduled dental interventions. Isolation during restoration of frontal and lateral groups of teeth. Using the cofferdam system. Types of cofferdam clamps.	6
4	<b>Topic 4.</b> Modern methods of processing hard tissues of teeth. Advantages and disadvantages.	2
5	<b>Topic 5.</b> Adhesion. Concept. Classification and characteristics of adhesive systems. Selection and features of using adhesive systems of different generations depending on the clinical situation	4
6	<b>Topic 6.</b> Restoring the contact point of frontal and lateral teeth. Restoration of depulped teeth. Aesthetic pin designs.	2
7	<b>Topic 7.</b> Finishing of the restoration. Contouring, grinding and polishing. Tools. Conducting algorithm.	4
8	<b>Topic 8.</b> Modern restoration techniques: biomimetic, bilaminar and stratification. Advantages and disadvantages. The technique of direct restoration of different groups of teeth.	6
	<b>Total</b>	<b>30</b>

#### 5.4. Topics of laboratory classes

Laboratory classes are not provided.

#### 6. Independent work

№ з/п	Topic name	Number hours
1.	<b>Topic 1.</b> Concept of aesthetics and aesthetic restoration of teeth. Indications and contraindications for direct and indirect restoration of teeth. Basics of aesthetic analysis of the face, smile, shape of tooth crowns.	6
2.	<b>Topic 2.</b> Microrelief of teeth. Aesthetic properties of the tooth. Optical properties of enamel and dentin. Peculiarities of determining the color of teeth in the dentist's office. Development of a treatment plan. Photo protocol. DSD - Digital Smile Design. Diagnostics.	8
3.	<b>Topic 3.</b> Patient preparation for scheduled dental interventions. Isolation during restoration of frontal and lateral groups of teeth. Using the cofferdam system. Types of cofferdam clamps.	8
4.	<b>Topic 4.</b> Modern methods of processing hard tissues of teeth. Advantages and disadvantages.	6
5.	<b>Topic 5.</b> Adhesion. Concept. Classification and characteristics of adhesive systems. Selection and features of using adhesive	8



	systems of different generations depending on the clinical situation	
6.	<b>Topic 6.</b> Restoring the contact point of frontal and lateral teeth. Restoration of depulped teeth. Aesthetic pin designs.	8
7.	<b>Topic 7.</b> Finishing of the restoration. Contouring, grinding and polishing. Tools. Conducting algorithm.	8
8.	<b>Topic 8.</b> Modern restoration techniques: biomimetic, bilaminar and stratification. Advantages and disadvantages. The technique of direct restoration of different groups of teeth.	8
<b>Total</b>		<b>60</b>

### 7. Teaching methods

**The teaching of the selective educational discipline " Fundamentals of Aesthetic Dental Restoration"** in seminar classes is provided by methodical developments for each seminar class, visual teaching aids for each class (presentations, video lectures), the department's information resource, and structured skill control algorithms.

**Independent work in the study** of a selective academic discipline is ensured by methodical developments for independent work, visual teaching aids (video lectures, presentations), information resource of the department, topics of independent work, structured algorithms of skill control.

There is no final control, the study of the discipline ends with a credit at the last seminar class.

### 8. Forms of control and assessment methods (including criteria for evaluating learning outcomes)

#### **Current control:**

1. Evaluation of theoretical knowledge on the subject of the lesson:

methods: survey, solving a situational clinical problem;

the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

2. Evaluation of practical skills and manipulations on the subject of the lesson:

methods: assessment of the correctness of the performance of practical skills, role play.

the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

#### **Current evaluation criteria in practical training**

Mark	Current evaluation
«5»	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills during the when working on a phantom and interpreting clinical, laboratory and instrumental research data, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.

«4»	The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the when working on a phantom and interpreting clinical, laboratory and instrumental research data with some errors, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
«3»	The acquirer does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of a situational clinical problem, demonstrates practical skills during the when working on a phantom and interpreting clinical, laboratory and instrumental research data with significant errors.
«2»	The acquirer does not possess the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the when working on a phantom and interpreting clinical, laboratory and instrumental research data.

Final control: credit.

Credit is given to the applicant who completed all tasks of the work program of the academic discipline, took an active part in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

Assessment is carried out: at the last lesson before the beginning of the examination session - with the tape system of learning, at the last lesson - with the cycle system of learning. The credit score is the arithmetic mean of all components according to the traditional four-point scale and has a value that is rounded according to the statistics method with two decimal places after the decimal point.

### **9. Distribution of points received by higher education applicants**

The average score for the discipline is translated into a national score and converted into points on a multi-point scale (200-point scale).

The conversion of a traditional grade into a 200-point grade is performed by the information and technical department of the University using the "Contingent" program according to the formula:

**Average success score (current success in the discipline) x 40**

**Table of conversion of traditional assessment to multi-point assessment**

<b>National assessment for discipline</b>	<b>The sum of points for the discipline</b>
<b>Excellent ("5")</b>	<b>185 – 200</b>
<b>Good ("4")</b>	<b>151 – 184</b>
<b>Satisfactory ("3")</b>	<b>120 – 150</b>
<b>Unsatisfactory ("2")</b>	<b>Less 120</b>

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the

information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is given to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale

According to the ECTS rating scale, the achievements of students in the educational component who study in the same course of the same specialty are evaluated, according to the points they received, by ranking, namely:

**Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale**

<b>Score on a scale ECTS</b>	<b>Statistical indicator</b>
A	Top 10% achievers
B	The next 25% of earners
C	The next 30% of earners
D	The next 25% of earners
E	The next 10% of earners

### **10. Methodical provision**

1. Working curriculum in the discipline " Fundamentals of Aesthetic Dental Restoration ".
2. Methodological developments for students for seminar classes.
3. Questions and tasks for current control of students' knowledge and skills.
4. Textbooks and study guides.
5. Scientific works of professors and teaching staff of the department and other researchers on problems of philosophy and methodology of science.
6. A collection of test tasks, an electronic bank of test tasks, situational tasks as part of methodological developments for seminar classes.

### 11. Questions for preparing for the final inspection

1. Concept of aesthetics and aesthetic restoration of teeth.
2. Indications and contraindications for direct and indirect tooth restoration.
3. Basics of aesthetic analysis of the face, smile, shape of tooth crowns.
4. Microrelief of teeth. Aesthetic properties of the tooth.
5. Optical properties of enamel and dentin.
6. Peculiarities of determining the color of teeth in the dentist's office. Building a treatment plan.
7. Photo protocol. DSD - Digital Smile Design. Diagnostics.
8. Preparing the patient for planned dental interventions.
9. Isolation during restoration of frontal and lateral groups of teeth. Using the cofferdam system. Types of paper clips.
10. Modern methods of processing hard tissues of teeth. Advantages and disadvantages.
11. Adhesion. Concept. Classification and characteristics of adhesive systems.
12. Selection and features of using adhesive systems of different generations depending on the clinical situation.
13. Restoration of the contact point of the frontal and lateral teeth.
14. Features of restoration of depulped teeth.
15. Aesthetic pin designs.
16. Finishing of the restoration. Toolkit, stages.
17. Contouring, grinding and polishing. Toolkit. Conducting algorithm.
18. Modern restoration techniques: biomimetic. Advantages and disadvantages.
19. Modern restoration techniques: bilaminar. Advantages and disadvantages.
20. Modern restoration techniques stratification. Advantages and disadvantages.
21. Technique of direct restoration of frontal teeth.
22. Technique of direct restoration of teeth of the lateral group.
23. Restoration of the crown of the teeth of the lateral group with the help of anchor pins.
24. Restoration of the crown of the teeth of the lateral group with the help of fiberglass pins.
25. Isolation during restoration of frontal and lateral groups of teeth. "Liquid rubber dam", other types of insulation.

### 12. Recommended literature

#### Main:

1. Materials science in dentistry: a study guide/[ Korol D.M., Korol M.D., Ojubeiska O.D. etc.] in general ed. King D.M. – Vinnytsia: New book – 2019. – 400 p.: illustrations.
2. Aesthetic accents of dentistry: manual/M.Ya. Nidzelskyi, E.H., Shiyan, H.M. Davydenko. – Vinnytsia: New Book, 2016.-208 p.: illustrations
3. Bidenko N.V., Borysenko A.V., Vasylichuk O.V. etc.. Algorithms for performing dental and medical manipulations for preparation for the State certification of students of the 5th year in the specialty "Dentistry". - Kyiv: Kniga-plus, 2017. - 408 p.

4. Danylevskiy M.F., Borysenko A.V., Sidelnikova L.F., Nesyn O.F., Dikova I.G. Therapeutic dentistry. Propaedeutics of therapeutic stomatology. T.1. - 3rd edition. — Kyiv: Medicine, 2017. — 360 p.
5. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics = Operative dentistry: in 2 volumes. – Volume 1: Endodontics: textbook / edited by A.V. Borysenko - Kyiv: Medicine, 2016. - 384 p.

**Auxiliary:**

1. Borysenko A.V. Dental caries. Pulpitis. Apical periodontitis. Oral sepsis: a textbook/ A.V. Borysenko, M. Yu. Antonenko, Yu. G. Romanova, S. A. Shnayder [et al.]; ed. By A. V. Borysenko. - Odessa: Astro, 2015. - 314 p.
2. Shmidzer Y. Aesthetic dentistry Color atlas .-GalDent, 2005.- 312 p., 952: illustrations.
3. Composite sealing and facing materials: study guide (university IV level a.) / A. V. Borysenko, V. P. Nespryadko, D. A. Borysenko. - K.: Medicine.-2015. - 300 s.
4. Information and educational environment [info.onmedu.edu.ua](http://info.onmedu.edu.ua)

**13. Information resources:**

1. Official website of ONMedU <https://onmedu.edu.ua/>
2. Electronic information resources of the ONMedU library <http://info.odmu.edu.ua/>
  - Electronic catalog of the library.
  - Information and reference sources: encyclopedias, directories, dictionaries
  - Educational electronic publications and resources: manuals containing systematized material within the curriculum of the academic discipline.