

EDUCATION STANDARD THAT AIMS AT PREPARING DENTAL STUDENTS FOR INDEPENDENT PRACTICE

I. METHOD OF EDUCATION ORGANISATION**1. GENERAL REQUIREMENTS**

- 1.1. The purpose of this standard is to prepare the dental student for independent practice. The training is carried out during the medical and dental studies, hereinafter referred to as “studies”.
- 1.2. The studies have the character of a long-cycle programme.
- 1.3. The studies consist of 10 semesters.
- 1.4. The number of hours of classes, including professional practice, cannot be less than 5,000.
- 1.5. The number of ECTS credits required for graduation cannot be less than 300.
- 1.6. The medical and dental studies are aligned to the scientific discipline - medical sciences as the leading discipline.
- 1.7. The studies have a general academic profile.

2. CLASSES AND GROUPS OF CLASSES

- 2.1. The educational process is carried out in the form of:
 - 1) classes or groups of classes corresponding to particular topics from the scientific discipline to which the field of study is assigned;
 - 2) integrated groups of classes combining two or more topics from the scientific discipline to which the field of study is assigned, in particular clinical sciences and practical clinical teaching;
 - 3) multidisciplinary groups of classes devoted to specific topics.
- 2.2. The study program includes classes or groups of classes that allow the achievement of learning outcomes related to teamwork and communication.

2.3. The study program includes classes or groups of classes that are related to the scientific activity conducted at the university in the scientific discipline to which the field of study is assigned. ECTS credits are assigned to the classes at a rate of more than 50% of the number of ECTS credits required for graduation. The program allows for the participation of students in classes that prepare them for conducting a scientific activity or participation in such activity.

3. MINIMUM NUMBER OF HOURS OF STRUCTURED CLASSES AND ECTS CREDITS

Groups of classes where specific learning outcomes are achieved	Number of hours	Number of ECTS credits
A. Morphological sciences	225	18
B. Scientific basis of medicine	300	22
C. Preclinical sciences	325	24
D. Behavioural and social sciences with elements of professionalism and communication, taking into account the idea of humanism in medicine	120	8
E. Non-interventional clinical sciences	565	32
F. Interventional clinical sciences	1520	85
G. Legal and organisational aspects of medicine	65	5
H. Practical clinical teaching in the fifth year of study	900	60
I. Professional Internship	480	16
Total	4,500	270

3.1. The university allows for no less than 500 hours of classes (30 ECTS credits), which may be realised as classes complementing knowledge, skills or social competences, however, the study program allows the student to choose classes to which ECTS credits are assigned in the amount of no less than 2% of the number of ECTS credits necessary for graduation.

3.2. Classes carried out in simulated clinical conditions constitute not less than 5% and not more than 30% of the hours of classes that allow achievement of learning outcomes in groups of classes E and F.

3.3. At least 70% of the hours of classes that allow to achieve learning outcomes in group of classes F are held in the form of exercises up to and including the fourth year of studies.

3.4. In the fifth year of study, there may be carried out classes that include educational content related to the organisation and management of the dental office and legislation in the field of medicine.

3.5. Physical education classes are compulsory classes in full-time studies, carried out at a rate of not less than 60 hours. No ECTS credits are assigned to these classes.

3.6. The number of ECTS credits that may be obtained through education using distance learning methods and techniques may not exceed 25% of the number of ECTS credits required for graduation.

3.7. The total number of hours of classes to achieve the learning outcomes for communication in class groups D, E and F is 120. These classes are taught throughout the entire period of studies.

3.8. Classes that enable the achievement of learning outcomes in the field of communication skills are conducted in such a way that each student has the opportunity to perform and repeat activities that allow him/her to achieve these outcomes.. At the same time, the instructor shall observe and provide feedback to the student. Classes are conducted in a simulated setting with simulated patients, or under clinical conditions.

3.9. Classes that enable the achievement of learning outcomes in the field of communication skills may be conducted for groups of students from at least two fields of study covered by the educational standards set out in the annexes to the Regulation, and also by implementing innovative methods that develop creativity and independent thinking.

4. PRACTICAL CLINICAL TEACHING

4.1. Practical clinical teaching includes classes that enable the achievement of learning outcomes in skill categories in groups of classes E, F and H.

4.2. Classes leading to the achievement of learning outcomes in the skill category of groups of classes E and F are carried out in the form of exercises.

4.3. Classes that enable the achievement of learning outcomes in class group H are used to further improve the learning outcomes achieved in the skills category in groups E and F in a clinical setting and are implemented in the fifth year of study in the form of exercises:

Scope of practical clinical teaching	Number of hours	Number of ECTS credits
Conservative dentistry with endodontics	140	10
Dental prosthetics	140	10
Dental surgery	110	7
Paediatric dentistry	100	6
Periodontal and oral mucosa diseases	95	6
Orthodontics	90	6
Oral and maxillofacial surgery	60	4
Dental radiology	15	1
Integral Adult Dentistry	65	4
Gerostomatology	45	3
Integrated dentistry of the developmental age	40	3
Total	900	60

Classes that enable the achievement of learning outcomes in group H may be conducted in simulated clinical settings, but no more than 10% of the hours of such classes.

4.4. Classes that enable the achievement of learning outcomes in group H are conducted in small groups of not more than 5 students.

5. PROFESSIONAL INTERNSHIP

5.1. Professional apprenticeships aim at the improvement of professional skills and are carried out as follows:

Scope of professional practice	Number of hours	Number of ECTS credits
Health care organisation	60	2
General surgery, internal medicine or oral and maxillofacial surgery	60	2
Dental Assisting	120	4
Medical and dental practice in a dental office	240	8
Total	480	16

5.2. Professional internships are carried out during the summer holidays. Professional practice allows one to achieve selected learning outcomes. The programme of professional internships, their form and timing, as well as the method of verification of the achieved learning outcomes, is determined by the university.

6. INFRASTRUCTURE NECESSARY FOR CONDUCTING EDUCATIONAL ACTIVITIES

6.1. The educational process takes place using an infrastructure that allows the achievement of the learning outcomes, which includes, in particular a prosectorium and a microscopy laboratory and which makes it possible to conduct classes in all clinical specialisations. Classes are conducted on the basis of the infrastructure of the universities and the infrastructure of the medical entities with which the universities have concluded contracts or agreements. The medical entities, due to their specific nature and the number of health services they provide, ensure that students are able to achieve the learning outcomes specified in the study programme.

6.2. Classes in the field of preclinical sciences (class group C) allowing the achievement of learning outcomes in the skill category are held on the basis of the university infrastructure in simulated clinical conditions.

6.3. Clinical sciences classes (class groups E and F) that allow the achievement of learning outcomes in the skills category are carried out in organisational units of the university where patient treatment is provided, as well as in therapeutic units or in simulated clinical conditions.

6.4. Classes of practical clinical teaching in the fifth year of study (class group H) and professional practice are held in medical units, particularly in clinics and hospitals, and may be held in simulated clinical conditions, but not more than 10% of the hours of these classes.

6.5. Medical entities where practical clinical education classes (class group H) and professional practice are held are:

- 1) therapeutic units that provide health care services in the area of in-patient treatment, in particular hospitals, which allow the achievement of learning outcomes;
- 2) medical units providing health services in the field of outpatient specialist care, primary health care or general dental care.

II. PERSONS PROVIDING EDUCATION AND TRAINING

In order to achieve learning outcomes in groups of classes, training is carried out by academic teachers or other persons possessing professional or scientific competence and experience in the field of study appropriate to the conducted classes. However, in groups of classes E, F and H, training is carried out by academic teachers or other persons possessing scientific achievements, the right to practice as a doctor or dentist, as well as the title of specialist or specialisation in the field of medicine or dentistry relevant to the conducted classes, or by persons possessing the right to practice as a doctor or dentist who have completed, during the specialisation training, the basic module or have completed the first year of the specialisation training in uniform specialisations in the relevant field of medicine or dentistry, if they obtained a positive opinion from the head of the specialisation, and with the participation of other persons possessing scientific achievements or experience in the field of medicine or dentistry.

In order to achieve the learning outcomes of communicating with patients and collaborating and communicating as part of a team, training is provided by academic teachers or other persons who have completed a course of study, whose programme specified learning outcomes in medical communication, or have completed training in medical communication, or have at least five years' experience in teaching medical communication.

III. LEARNING OUTCOMES

1. GENERAL LEARNING OUTCOMES

1.1. In terms of knowledge, the graduate knows and understands:

- 1) issues in medicine and life sciences - to a basic extent;
- 2) issues in the field of dentistry - in an advanced degree;
- 3) issues of pro-health education;
- 4) principles of conducting scientific research and dissemination of its results;
- 5) organisation of the practice of a dentist and principles of management in the health care system.

1.2. In terms of skills, the graduate is able to:

- 1) carry out the diagnosis of the most common diseases, assess and describe the somatic and mental state of the patient;
- 2) provide professional dental care in terms of prevention, treatment, health promotion and pro-health education;
- 3) plan treatment for dental problems;
- 4) carry out clinical management based on knowledge and respecting principles of humaneness;
- 5) plan his/her own educational activity and continuously update his/her knowledge;
- 6) inspire the learning process of others;
- 7) communicate with the patient and his/her family in an atmosphere of trust, taking into account the needs of the patient, applying the principles of professional communication;
- 8) communicate in a team and share knowledge;
- 9) critically evaluate research findings and justify a position accordingly.

1.3. In terms of social competence, the graduate is prepared to:

- 1) establish and maintain a deep and respectful contact with the patient and show understanding for worldview and cultural differences;
- 2) be guided by the welfare of the patient;
- 3) respect patient confidentiality and patient rights;
- 4) act towards the patient on the basis of ethical principles, with awareness of the social conditions and limitations resulting from the illness;
- 5) perceive and recognise own limitations, carry out self-assessment of deficits and learning needs;
- 6) promote pro-health behaviour;
- 7) use objective sources of information;
- 8) formulate conclusions from their own measurements or observations;
- 9) implement the principles of professional camaraderie and cooperation in a team, including with representatives of other medical professions, and in a multicultural and multinational

environment;

- 10) formulate opinions on various aspects of professional activity;
- 11) assume responsibility for decisions made in the course of professional activities, including for their own safety and that of others.

2. SPECIFIC LEARNING OUTCOMES

A. MORPHOLOGICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- A.W1. the structures of the human body: cells, tissues, organs and systems, with particular reference to the stomatognathic system;
- A.W2. development of organs and the whole organism, with particular emphasis on the masticatory organ;
- A.W3. the structure of the human body in a topographical and functional approach, with particular reference to the head and neck;
- A.W4. the role of the nervous system in the functioning of individual organs;
- A.W5. the functional significance of the individual organs and the systems they form;
- A.W6. anatomical rationale for the physical examination;
- A.W7. the anatomy of the natural teeth.

In terms of skills, the graduate is able to:

- A.U1. interpret anatomical relationships illustrated by basic methods of diagnostic radiology examinations (review images and with contrast agents), with particular emphasis on the head and neck;
- A.U2. operate an optical microscope and recognise under the microscope the histological structure of tissues and organs and to describe and interpret the microscopic structure of cells, tissues and organs and their functions;
- A.U3. recognise the anatomical features of natural teeth.

B. SCIENTIFIC BASIS OF MEDICINE

In terms of knowledge, the graduate knows and understands:

- B.W1. the importance of major and trace elements in body processes, including their supply, absorption and transport;
- B.W2. the importance of electrolytes, buffer systems and chemical reactions in biological systems;
- B.W3. the biochemical basis of the integrity of the human body;
- B.W4. the structure and function of important chemical compounds found in the human body, in particular the properties, functions, metabolism and reaction energetics of proteins,

nucleic acids, carbohydrates, lipids, enzymes and hormones;

- B.W5. the principles of calcium and phosphate metabolism;
- B.W6. the role and importance of body fluids, including saliva;
- B.W7. the principles of statics and biomechanics in relation to the human body;
- B.W8. methods of imaging tissues and organs and the principles of operation of diagnostic equipment for this purpose;
- B.W9. principles of ultrasound equipment;
- B.W10. principles of photometry and fibre optics and the use of light sources in dentistry;
- B.W11. principles of lasers in dentistry;
- B.W12. basic concepts of biology and ecology;
- B.W13. interdependencies between organisms in an ecosystem;
- B.W14. interactions in the parasite-host system;
- B.W15. selected issues in genetics and molecular biology;
- B.W16. clinical application of the principles of genetics;
- B.W17. vital functions of humans;
- B.W18. neurohormonal regulation of physiological processes;
- B.W19. the principles of acid-base balance and oxygen and carbon dioxide transport in the body;
- B.W20. enzymes involved in the digestive process, the mechanism of hydrochloric acid production in the stomach, the role of bile, the course of absorption of digestive products;
- B.W21. the principles of metabolism and nutrition;
- B.W22. the numerical value of basic physiological variables and changes in these values;
- B.W23. basic computer and biostatistical tools used in medicine, including medical databases, spreadsheets and basics of computer graphics;
- B.W24. basic methods of statistical analysis used in population and diagnostic studies.

In terms of skills, the graduate is able to:

- B.U1. interpret physical phenomena occurring in the masticatory organ;
- B.U2. use physical processes relevant to the dental practitioner's work;
- B.U3. assess the harmfulness of the dose of ionising radiation and comply with the principles of radiological protection;
- B.U4. apply the principles of radiological protection;
- B.U5. determine the pH of a solution and the effect of pH changes on inorganic and organic compounds;
- B.U6. operate simple measuring instruments and assess the accuracy of the measurements taken;

- B.U7. perform simple functional tests assessing the state of the human body as a stable regulation system (stress and exercise tests) and interpret numerical data on basic physiological variables;
- B.U8. use concepts of biology and ecology in the context of the human - living environment;
- B.U9. apply knowledge of genetics and molecular biology in clinical work;
- B.U10. use databases, including online databases, and search for needed information using available tools;
- B.U11. critically analyse medical literature, including in English, and draw conclusions;
- B.U12. select an appropriate statistical test, perform basic statistical analyses, use appropriate methods to present results and interpret the results of meta-analysis.

C. PRECLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- C.W1. the genera and species and structure of bacteria, viruses, fungi and parasites, their biological characteristics and mechanisms of pathogenicity;
- C.W2. the physiological bacterial flora of man;
- C.W3. the basics of epidemiology of infections caused by bacteria, viruses, fungi and infections caused by parasites and the pathways of their spread in the human body;
- C.W4. the species of bacteria, viruses, fungi and parasites that are the most common aetiological agents of infections and infestations;
- C.W5. the basics of disinfection, sterilisation and aseptic management;
- C.W6. disease risk factors: external and internal, modifiable and non-modifiable;
- C.W7. the structure of the immune system and its role;
- C.W8. humoral and cellular mechanisms of innate and acquired immunity and mechanisms of hypersensitivity reactions and autoimmune processes;
- C.W9. the effect of oxidative stress on cells and its importance in the pathogenesis of diseases and in the aging process of the organism;
- C.W10. the phenomenon of drug resistance formation;
- C.W11. basics of immunodiagnosis and immunomodulation;
- C.W12. pathomechanism of selected hypersensitivity, autoimmune and immunodeficiency diseases;
- C.W13. concepts of homeostasis, adaptation, resistance, immunity, susceptibility, susceptibility, compensatory mechanisms, feedback and the “vicious circle” mechanism;
- C.W14. the concepts of health and disease, the mechanisms of onset and development of the disease process at the molecular, cellular, tissue and systemic levels and the impact of these mechanisms on the clinical manifestations of disease, its complications and

prognosis;

- C.W15. the mechanisms of inflammatory reaction and wound healing;
- C.W16. physiology and psychology of pain, diagnosis and classification of pain, pain assessment tools;
- C.W17. diagnostic methods used in pathomorphology, their advantages and limitations, principles of appropriate cooperation between the dentist and pathomorphologist in the diagnosis of organ and systemic disorders;
- C.W18. cytological diagnostic methods and cytodagnostic criteria for the diagnosis and differentiation of neoplastic and non-neoplastic diseases;
- C.W19. the definition of death, the dying process, the hallmarks of death and post-mortem lesions, the principles of post-mortem examinations and the autopsy technique and its peculiarities;
- C.W20. mechanisms of action, principles of dosage and pharmacokinetics of drugs;
- C.W21. indications and contraindications for the use of drugs, their dosage, adverse and toxic effects and drug interactions;
- C.W22. principles of local and general therapy of infections caused by bacteria, viruses, fungi and infections caused by parasites;
- C.W23. the principles of local and general antibiotic therapy and scientific recommendations for the prevention and control of infections, including the use of antibiotics and antiseptics in daily dental practice;
- C.W24. ways to prevent and manage pain in patients and anxiety and stress in various clinical situations;
- C.W25. pharmacotherapy used in various life-threatening conditions;
- C.W26. principles and legislation of prescribing ready-made and prescription medicines;
- C.W27. principles of ergonomic organisation of work in a dental surgery and performance of dental procedures;
- C.W28. principles of safety and hygiene of work in dentistry;
- C.W29. equipment of a dental surgery and laboratory of dental technology and instrumentation used in dental procedures and laboratory performance of prosthetic restorations and orthodontic appliances;
- C.W30. the biomechanics of the masticatory organ;
- C.W31. the definition and classification of basic and auxiliary dental materials;
- C.W32. composition, structure, properties, purpose and use of dental materials;
- C.W33. surface properties of dental hard tissues and dental biomaterials;
- C.W34. the phenomenon of adhesion and procedures for adhesive surface preparation of enamel, dentin and dental biomaterials;
- C.W35. the mechanisms of degradation (corrosion) of dental biomaterials in the oral cavity

and their effect on the biological properties of dental materials;

- C.W36. basic clinical procedures of dental hard tissue reconstruction and endodontic treatment;
- C.W37. basic methods and technical-laboratory procedures of prosthetic restorations;
- C.W38. basic clinical procedures in caries prevention;
- C.W39. basic clinical procedures in periodontal treatment and prophylaxis;
- C.W40. principles of local anaesthesia in dentistry;
- C.W41. principles and techniques of tooth extraction;
- C.W42. basic clinical procedures in orthodontic prophylaxis.

In terms of skills, the graduate is able to:

- C.U1. collect biological material for microbiological examination depending on the location and course of the infection;
- C.U2. interpret the results of microbiological, serological and antibiogram tests;
- C.U3. select and perform qualitative and quantitative tests for the presence of bacteria in body fluids;
- C.U4. explain the aetiopathogenesis, present the clinical, macroscopic and microscopic picture and evolution of pathological changes and predict their consequences;
- C.U5. analyse the clinical course of diseases in pathological processes;
- C.U6. identify pathological changes of cells, tissues and organs in terms of circulatory disorders, retrograde and progressive changes, potentially neoplastic disorders, tumours and inflammation;
- C.U7. interpret the result of a pathomorphological examination;
- C.U8. select drugs in appropriate doses to correct pathological phenomena in the human body and in individual organs;
- C.U9. work in a dental surgery with observance of the principles of ergonomics;
- C.U10. select appropriate tools for a dental procedure;
- C.U11. prepare a carious cavity and restore missing mineralised tissues in a phantom tooth;
- C.U12. perform endodontic treatment under simulated dental conditions;
- C.U13. apply adhesive techniques;
- C.U14. make a selection of restorative, prosthetic and bonding biomaterials, based on material properties and clinical conditions;
- C.U15. map anatomical occlusal conditions and analyse occlusion;
- C.U16. design prosthetic restorations;
- C.U17. perform basic periodontal procedures under simulated dental conditions;
- C.U18. perform local anaesthesia and basic surgical procedures in a dental simulation setting;
- C.U19. plan and carry out health promotion and caries prevention activities;
- C.U20. plan and carry out periodontal prophylaxis activities;

C.U21. plan orthodontic prophylaxis activities.

D. BEHAVIOURAL AND SOCIAL SCIENCES WITH ELEMENTS OF PROFESSIONALISM AND COMMUNICATION, TAKING INTO ACCOUNT THE IDEA OF HUMANISM IN MEDICINE

In terms of knowledge, the graduate knows and understands:

- D.W1. the concepts of health and disease, the influence of the social environment (family, work, social relations) and socio-cultural conditions (origin, social status, religion, nationality, ethnic group) on the health of the patient;
- D.W2. human behaviour conducive to maintaining health, principles of health promotion, prevention and primary and secondary prevention;
- D.W3. forms of violence, including domestic violence, social determinants of various forms of violence and the role of the dentist in its recognition, as well as the principles of proceeding in the case of suspicion of violence, including the “Blue Card” procedure;
- D.W4. social attitudes towards illness, disability and old age and the specific impact of stereotypes, prejudice and discrimination;
- D.W5. the concept of empathy and phrases and behaviours to express it;
- D.W6. the psychophysical development of the human being from birth to death, including the specifics of physical, emotional, cognitive and social development;
- D.W7. the specificity and role of verbal (conscious construction of messages) and non-verbal communication (e.g. facial expressions, gestures, management of silence and space);
- D.W8. the role of the patient’s family in the process of illness (recognition of illness, adaptation to illness, recovery) and ways of coping with difficult situations (progression of illness, dying process, bereavement);
- D.W9. the principles of motivating the patient to behave in a health-promoting manner and human behaviour that promotes health maintenance;
- D.W10. the concepts of patient safety and safety culture and their aspects: organisational, communication and management;
- D.W11. the concept of stress, including eustress and distress, and the impact of stress on the aetiopathogenesis and course of somatic diseases and mental disorders, and mechanisms of coping with stress;
- D.W12. symptoms of the dentist’s professional burnout syndrome and methods of its prevention;
- D.W13. problematic psychoactive substance use and addiction and behavioural addictions, methods of carrying out brief interventions with problematic psychoactive substance

users, mechanisms of addiction formation and the goals and methods of treatment of addicts and effective prevention strategies, psychosomatic disorders occurring in persons in a close relationship with an addict and methods of therapeutic management;

D.W14. principles of functioning of the interdisciplinary therapeutic team;

D.W15. the history of medicine, with particular emphasis on the history of dentistry;

D.W16. the process of formation of new specialties in the field of scientific discipline - medical sciences and achievements of leading representatives of medicine and Polish and world dentistry.

In terms of skills, the graduate is able to:

D.U1. take into account in the process of therapeutic management subjective needs and expectations of a patient resulting from socio-cultural conditions;

D.U2. choose such treatment that minimises social consequences for the patient;

D.U3. use open-ended questions, closed questions, paraphrasing, clarification, internal and final summaries, signalling, active listening (e.g., capturing and recognising signals sent by the interlocutor, verbal and non-verbal techniques) and facilitation (encouraging the interlocutor to speak) as appropriate to the situation;

D.U4. adapt verbal communication to the patient's needs, expressing themselves clearly and avoiding medical jargon;

D.U5. recognise and analyse difficult situations and communication challenges, including crying, strong emotions, anxiety, interruptions, awkward and sensitive issues, silence, withdrawal, aggressive and demanding behaviour, and deal with these in a constructive manner;

D.U6. establish contact with the patient and their family to build an appropriate relationship;

D.U7. look at the situation from the patient's perspective, building an appropriate conversational context and using the elicitation method, and incorporate this in the construction of verbal messages;

D.U8. recognise their own emotions and manage them in their relationships with others in order to perform effectively despite their own emotional reactions;

D.U9. describe and critically evaluate their own behaviour and communication, taking into account the possibility of alternative behaviour;

D.U10. take action to improve the patient's quality of life and prevent it from deteriorating in the future;

D.U11. recognise and counteract the dentist's professional burnout syndrome;

D.U12. demonstrate responsibility for improving one's qualifications and passing on knowledge to others;

D.U13. communicate with the patient in one of the foreign languages at the B2+ level of the

Common European Framework of Reference for Languages.

E. NON-INTERVENTIONAL CLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- E.W1. basic disorders of hormone secretion regulation, water and electrolyte metabolism, acid-base balance, renal, pulmonary and hepatic function and the mechanisms of formation and effects of cardiovascular disorders, including shock;
- E.W2. the mechanisms leading to organ and systemic pathologies, including chronic non-communicable, infectious, metabolic, genetic and immunodeficiency diseases;
- E.W3. the effects on the human body of physical, chemical and biological factors as well as avitaminosis and stress;
- E.W4. the relationship between morphological abnormalities and the function of altered organs and systems, and clinical manifestations and diagnostic and treatment options;
- E.W5. the basic methods of medical examination and the role of additional examinations in the diagnosis, monitoring, prognosis and prevention of organ and systemic disorders, with particular emphasis on their impact on oral tissues;
- E.W6. the aetiopathogenesis and symptomatology of diseases of the respiratory, circulatory, haematopoietic, genitourinary, immune, gastrointestinal and musculoskeletal systems, and endocrine glands, with particular reference to diseases whose symptoms occur in the oral cavity;
- E.W7. the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases affecting the oral cavity in children;
- E.W8. principles of management of victims in multi-organ trauma;
- E.W9. principles of organisation of emergency response in disasters and emergencies and the phases of emergency response and the extent of assistance to victims;
- E.W10. principles of pharmacological and non-pharmacological treatment of acute and chronic pain, cancer, neuropathic pain and the specificity of pain treatment in different groups of patients;
- E.W11. neurological effects of chronic drug use;
- E.W12. symptoms of acute abdominal diseases, poisoning, infection and septicæmia;
- E.W13. clinical manifestations, treatment and prevention of droplet-transmitted infections;
- E.W14. symptoms of viral hepatitis, HIV infection and acquired immunodeficiency syndrome (AIDS), infectious and parasitic diseases;
- E.W15. principles of immunisation against infectious diseases in different groups of patients;
- E.W16. symptoms of skin diseases, with particular emphasis on dermatoses with possible symptomatology in the oral cavity;
- E.W17. endocrine determinants of the female body at different periods of life;

- E.W18. the influence of nutrition and the use of alcohol and other psychoactive substances by a pregnant woman on the development of the fetus;
- E.W19. principles of dental care for the pregnant woman;
- E.W20. environmental and epidemiological determinants of the most common cancers;
- E.W21. basics of early detection of tumours and principles of screening in oncology;
- E.W22. principles of diagnostic and therapeutic management of head and neck cancer;
- E.W23. principles of diagnosis of eye diseases, including eye injuries;
- E.W24. immunological aspects of transplantation and blood donation;
- E.W25. causes and mechanisms of cardiac and respiratory arrest and principles of resuscitation and post-resuscitation management;
- E.W26. life-threatening conditions;
- E.W27. methods used in medical rehabilitation, its goals and methodology of planning;
- E.W28. cases in which a patient should be referred to hospital;
- E.W29. possibilities of modern cancer therapies and their adverse effects;
- E.W30. clinical symptoms of the most common cancers and preventive measures in oncology.

In terms of skills the graduate is able to:

- E.U1. perform differential diagnosis of the most common diseases;
- E.U2. communicate with the patient, assess and describe the somatic and psychological condition of the patient, applying the principles of professional communication;
- E.U3. plan the diagnostic and therapeutic management of the most common diseases;
- E.U4. interpret the results of laboratory tests;
- E.U5. identify normal and pathological structures and organs in additional imaging studies (X-ray, ultrasound and computed tomography - CT);
- E.U6. plan the management of exposure to blood borne infection;
- E.U7. qualify the patient for vaccination;
- E.U8. take a history in a health and life threatening situation using the SAMPLE scheme (S - Symptoms, A - Allergies, M - Medications, P - Past medical history), L - Last meal, E - Events prior to injury/illness);
- E.U9. recognise life-threatening risks;
- E.U10. describe and recognise the symptoms of shock and acute circulatory failure;
- E.U11. recognise symptoms of brain injury and cerebrovascular disease, dementia syndromes and disorders of consciousness;
- E.U12. diagnose head and facial pain and neurological diseases occurring in various groups of patients, posing problems in dental practice;

- E.U13. recognise diseases of the nasopharyngeal cavity, their aetiology and pathomechanism;
- E.U14. initially diagnose neoplastic lesions of the nose, pharynx and larynx;
- E.U15. diagnose and treat skin diseases (infectious, allergic, autoimmune, vascular, reactionary, pigmented, sexually transmitted);
- E.U16. recognise moles, neoplasms and pre-cancerous conditions of the skin;
- E.U17. recognise dermatoses and collagenoses with symptoms in the oral mucosa;
- E.U18. recognise diseases related to smoking and problematic use of or dependence on alcohol and other psychoactive substances;
- E.U19. diagnose diseases with lymphadenopathy of the neck and submandibular region and infectious diseases, with particular emphasis on oral lesions;
- E.U20. diagnose selected diseases of the optic and protective eye system;
- E.U21. perform basic medical procedures and treatments, including temperature measurement, pulse measurement, non-invasive blood pressure measurement, oxygen treatment, assisted and replacement ventilation, oropharyngeal tube insertion, preparation of the surgical field, hygienic and surgical hand decontamination, intravenous, intramuscular and subcutaneous injection, collection of peripheral venous blood, collection of nasopharyngeal and skin swabs, simple strip tests, blood glucose measurement, management of syncope, shock and sudden cardiac arrest;
- E.U22. assess the risk of oral cancer, recognise pre-cancerous lesions and refer the patient to a specialist.

F. INTERVENTIONAL CLINICAL SCIENCES

In terms of knowledge, the graduate knows and understands:

- F.W1. stages of development of dentition, occlusal norms and deviations from norms and anatomical-functional variability at different stages of individual life;
- F.W2. the principles of prophylaxis applied to diseases of the masticatory organ, including oncology;
- F.W3. the role of the oral microbiome;
- F.W4. symptoms, course and management of specific diseases of the oral cavity, head and neck, including age groups;
- F.W5. principles of management of diseases of the pulp and mineralised tissues of the teeth;
- F.W6. principles of management of diseases of periapical tissues and dental infections;
- F.W7. morphology of dental cavities and principles of endodontic treatment;
- F.W8. the advantages and limitations of dental treatment under magnification;

- F.W9. principles of the use of instrumentation, materials and pharmacological agents in dental treatment;
- F.W10. diagnosis and principles of management of maxillary cysts, inflammatory lesions of bone and soft tissue of the craniofacial part and potentially malignant disorders of the oral cavity;
- F.W11. the symptoms, course and management of early and advanced stages of tumours of the head and neck, with particular reference to malignant tumours of the oral mucosa;
- F.W12. diagnosis and methods of treatment of periodontal and peri-implant diseases and diseases of the oral mucosa and salivary glands;
- F.W13. principles of management of injuries to teeth and jawbone;
- F.W14. principles of planning implantoprosthodontic treatment;
- F.W15. indications and contraindications for restorative dentistry procedures;
- F.W16. causes of complications of diseases of the stomatognathic system and principles of their elimination;
- F.W17. differential diagnosis of oral and facial pain;
- F.W18. principles of use of pharmacological agents in prevention and treatment of oral diseases;
- F.W19. therapeutic methods used in the reduction of dental anxiety and stress;
- F.W20. principles of pain relief in dental practice including appropriate anaesthetic agents and methods;
- F.W21. methods of rehabilitation of the masticatory organ;
- F.W22. principles of planning and clinical implementation of prosthetic treatment in simple and complicated cases, including the use of tools of digital dentistry;
- F.W23. principles of diagnosis, initial treatment and prevention of functional disorders of the masticatory organ;
- F.W24. principles of construction and operation of removable and fixed orthodontic appliances;
- F.W25. principles of dental radiological diagnostics, including taking intraoral radiographs and interpretation of radiographs;
- F.W26. the pathomechanism of the effect of oral diseases on the patient's general health;
- F.W27. the pathomechanism of the impact of systemic diseases or applied therapies on the oral cavity;
- F.W28. the specifics of dental care of the patient burdened by systemic disease and the principles of cooperation with the doctor treating the systemic disease;
- F.W29. the issue of dental care of a patient with head or neck cancer before, during and after oncological treatment.

In terms of skills, the graduate is able to:

- F.U1. take a medical and dental history with a patient or his/her family, observing the principles of professional communication;
- F.U2. convey information to the patient, adapting its number and content to the patient's needs and capabilities, supplement verbal information with models and written information, including diagrams and instructions, and use them appropriately;
- F.U3. make diagnostic and therapeutic decisions with the patient, including assessing the patient's level of involvement, needs and capabilities in this regard, encourage the patient to take an active part in the decision-making process, discuss the advantages and disadvantages, expected long-term outcomes and consequences of these decisions, and obtain informed consent from the patient;
- F.U4. identify the social determinants of oral health, the symptoms of the occurrence of anti-health and self-destructive behaviours and discuss these with the patient, and make a note in the medical record;
- F.U5. recognise during examination of a patient behaviours and symptoms indicating the possibility of violence, including domestic violence, make a note in the medical record, and initiate the 'Blue Card' procedure;
- F.U6. perform a dental physical examination of the patient;
- F.U7. collect and secure material for diagnostic tests, including cytological, histopathological and microbiological tests, for dental indications;
- F.U8. maintain medical records, issue referrals for specialist dental and general medical examination or treatment;
- F.U9. order additional examinations and interpret their results and schedule consultations;
- F.U10. determine indications and contraindications for a specific dental procedure;
- F.U11. conduct treatment of acute and chronic, dento- and non-dento-derived inflammatory processes of the oral cavity soft tissues, periodontium and jaw bones;
- F.U12. manage general and local complications during and after dental procedures;
- F.U13. select medications for dental indications, taking into account their interactions and side effects
- F.U14. apply pharmacological and non-pharmacological methods of relieving pain associated with a dental procedure and dental anxiety and stress;
- F.U15. formulate research problems in dentistry;
- F.U16. obtain information from members of the interdisciplinary team, respecting their differing opinions and specialist competencies, and incorporate this information into the patient's diagnostic and therapeutic plan;
- F.U17. accept, explain and analyse his/her role and responsibilities in the team and recognise his/her role as a dentist in the interdisciplinary team;
- F.U18. establish a prevention and treatment plan based on an individual risk assessment of

oral diseases;

- F.U19. diagnose and treat diseases of mineralised tissues to a basic extent;
- F.U20. diagnose and treat to a basic extent, diseases of the pulp and periapical tissues;
- F.U21. plan and carry out prosthetic treatment in simple cases;
- F.U22. provide assistance in case of damage to a prosthetic restoration;
- F.U23. recognise functional disorders of the masticatory organ;
- F.U24. diagnose and non-surgically treat periodontal and peri-implant diseases;
- F.U25. diagnose and treat selected diseases of the oral mucosa;
- F.U26. diagnose the clinical manifestations of neoplastic disorders, including potentially malignant ones, of the oral cavity and oral and salivary gland neoplasms;
- F.U27. diagnose, differentiate and classify malocclusion;
- F.U28. provide assistance in case of orthodontic appliance damage;
- F.U29. carry out prophylactic procedures to prevent malocclusion during the period of deciduous dentition and early tooth replacement;
- F.U30. establish a treatment plan in complex cases of diseases of the tissues of the stomatognathic system;
- F.U31. interpret the results of radiological examinations used in dental diagnostics.

G. LEGAL AND ORGANISATIONAL ASPECTS OF MEDICINE

In terms of knowledge, the graduate knows and understands:

- G.W1. the concept of public health and the aims, objectives and structure of the public health system;
- G.W2. concepts and models of health promotion;
- G.W3. basic concepts of prevention, health promotion, environmental hygiene and related to individual and population health, as well as lifestyle;
- G.W4. methods of determining the health needs of the population;
- G.W5. the health situation and health policy strategies in the Republic of Poland, the European Union and the world;
- G.W6. principles of functioning, management and computerisation of entities performing medical activity, including individual and group medical practice;
- G.W7. legal regulations concerning the organisation and financing of the health care system, provision of publicly financed health care services and principles of functioning of information and communication tools and services in health care (e-health);
- G.W8. e-services in health care, including their types, importance for competitiveness, barriers limiting development and applications in dentistry;
- G.W9. principles of negotiating and contracting health services in the public and non-public sectors;

- G.W10. The aetiology of occupational diseases as defined by law, including those related to the practice of dentistry;
- G.W11. indicators of the health status of the population and principles of epidemiological assessment of the health status of the population;
- G.W12. principles of planning and evaluation of preventive actions;
- G.W13. the principles of epidemiological elaboration of an infectious disease outbreak and the principles of proceeding in an epidemiological emergency;
- G.W14. principles of organisation and conduct of dental practice;
- G.W15. the principles of medical ethics and deontology, ethical problems of contemporary medicine resulting from the dynamic development of science and biomedical technologies, as well as the principles of ethical conduct of a dentist;
- G.W16. the legal basis for the functioning of the medical profession and the professional self-government of doctors and dentists in the Republic of Poland;
- G.W17. the principles of obtaining and losing the right to practice dentistry;
- G.W18. basic patient rights, including the right to: consent to a medical procedure, medical information, respect for intimacy and personal dignity, medical confidentiality, access to medical records;
- G.W19. legal regulations on medical experimentation and conducting scientific research with human subjects;
- G.W20. basic regulations in the field of pharmaceutical law, including the principles of marketing medicinal and medical products, reimbursement of medicines, cooperation between the dentist and pharmacist and reporting of adverse drug reactions;
- G.W21. the concept and type of pharmaceuticals, including the principles of the use of medicinal and medical products, reimbursement of medicines, cooperation between the dentist and pharmacist and reporting of adverse drug reactions;
- G.W22. the principles and prerequisites of legal liability of a dentist, including civil, criminal, professional and labour liability;
- G.W23. the basic principles of practising dentists in the context of the employment relationship;
- G.W24. legal regulations concerning the performance of medical activities;
- G.W25. principles of providing benefits in case of illness, maternity, accidents at work and occupational diseases;
- G.W26. the principles of adjudication of temporary inability to work, inability to work for disability purposes and disability or its degree;
- G.W27. the legal regulations on medical confidentiality and the principles of keeping, storing and making available medical records, including e-documentation, and personal data protection;

- G.W28. measures of civil and criminal law protection of a dentist in relation to violation of his/her personal rights;
- G.W29. the principles of ascertaining death and the handling of cadavers;
- G.W30. basics of serology, genetics and forensic toxicology;
- G.W31. legal regulations concerning the dentist's duties in the case of suspected domestic violence;
- G.W32. legal and systemic aspects of patient safety from a national and international perspective.

In terms of skills, the graduate is able to:

- G.U1. analyse data on the state of health of the population, epidemiological data and determine the state of health of the population on their basis and predict the impact of selected health phenomena and problems on the functioning of the health care system;
- G.U2. assess the scale of health problems, indicate health priorities, and determine their significance in health policy;
- G.U3. analyse the determinants of the epidemiological situation in terms of social and demographic processes and quality of life - general and oral health-related;
- G.U4. develop simple prevention and oral health promotion programmes;
- G.U5. plan prevention and health promotion activities and implement population health promotion activities;
- G.U6. analyse the systems of financing health services in the Republic of Poland, the European Union and in the world;
- G.U7. prepare competitive offers related to provision of health services;
- G.U8. recognise risk and exposure factors associated with occupational disease, in particular of a dentist;
- G.U9. provide the patient with the necessary information on oral health promotion, risk factors and ways to prevent the most common diseases in society;
- G.U10. interpret basic epidemiological indicators, define and evaluate the reliability and relevance of tests used in screening;
- G.U11. explain the differences between prospective and retrospective, randomised and clinical-control studies, case reports and intervention studies, and rank them according to the reliability and quality of the scientific evidence;
- G.U12. explain and apply the standards of the Code of Medical Ethics and international standards of medical ethics;
- G.U13. observe ethical role models in professional activities;
- G.U14. use the text of a legal act and use legal terminology;

- G.U15. apply legal regulations concerning the practice of the dental profession;
- G.U16. respect the rights of the patient;
- G.U17. recognise the prerequisites for taking medical action without the patient's consent or using coercion against the patient and apply the measures provided for by the law;
- G.U18. issue medical certificates and medical decisions, prepare opinions for the patient, authorised bodies and entities, prepare and maintain medical records (in electronic and paper form), and use information and communication tools and services in health care (e-health);
- G.U19. use legislation to protect one's rights;
- G.U20. organise the work environment to ensure the safety of the patient and others, taking into account the influence of human factors and ergonomic principles.

H. PRACTICAL CLINICAL TEACHING IN THE FIFTH YEAR OF STUDY

In terms of skills, the graduate can independently:

- H.U1. take a medical and dental history with professional communication principles;
- H.U2. conduct a complete and focused dental examination;
- H.U3. communicate with the patient and his/her family;
- H.U4. order additional examinations and specialist consultations;
- H.U5. interpret the results of basic laboratory tests and histopathological examinations performed for dental indications;
- H.U6. perform body temperature, pulse and non-invasive blood pressure measurements;
- H.U7. perform intravenous, intramuscular and subcutaneous drug administration;
- H.U8. recognise life-threatening conditions and act appropriately when they occur;
- H.U9. manage syncope, shock and sudden cardiac arrest;
- H.U10. select medications for dental indications, taking into account their interactions and adverse effects;
- H.U11. organise work in the dental surgery according to ergonomic principles and coordinate cooperation in the dental team;
- H.U12. use the dental instrumentation;
- H.U13. perform differential diagnosis of oral and facial pain;
- H.U14. perform differential diagnosis of oral and facial pain;
- H.U15. diagnose and treat to a basic extent diseases of hard tissues of permanent teeth;
- H.U16. diagnose and treat to a basic extent diseases of the pulp of permanent teeth and periapical tissues;
 - H.U17. diagnose dental malformations and identify the need for specialist treatment;
 - H.U18. diagnose and carry out the treatment of post-traumatic injuries to permanent teeth,

- including providing first aid, referral to an appropriate specialist, treating uncomplicated injuries;
- H.U19. plan and carry out prophylactic dental procedures, carry out pro-health education, in particular on the oral cavity;
 - H.U20. establish a plan of prophylactic and therapeutic procedures on the basis of an individual assessment of the risk of oral diseases;
 - H.U21. develop simple oral health prevention and promotion programmes;
 - H.U22. develop appropriate dental attitudes in the developmental age patient;
 - H.U23. prevent, diagnose and treat caries of deciduous teeth;
 - H.U24. prevent, diagnose and treat caries of permanent teeth with incomplete development;
 - H.U25. recognise and treat pulp diseases of deciduous and permanent teeth with incomplete development;
 - H.U26. recognise and treat periapical lesions of deciduous and permanent teeth with incomplete development;
 - H.U27. recognise periodontal and oral mucosal diseases in the developmental patient, identify the need for specialist and non-specialist treatment;
 - H.U28. diagnose and carry out the management of post-traumatic damage to the crowns of deciduous teeth and permanent teeth with incomplete development;
 - H.U29. differentiate between normal and abnormal forms of occlusion;
 - H.U30. evaluate normal and abnormal functions of the masticatory organ;
 - H.U31. provide assistance in case of damage to fixed and removable orthodontic appliances;
 - H.U32. plan and implement orthodontic prophylaxis procedures;
 - H.U33. make an impression for a diagnostic model and record occlusion;
 - H.U34. plan and carry out integrated dental treatment of patients of developmental age;
 - H.U35. perform intraoral superficial, intrathecal and regional anaesthesia;
 - H.U36. perform extraction of single- and multi-rooted teeth;
 - H.U37. perform surgical supply of the alveolus after tooth extraction;
 - H.U38. deal with complications of tooth extraction;
 - H.U39. perform incision of intraoral dentoalveolar abscesses;
 - H.U40. recognise and treat dento- and non-dento-derived inflammation of the soft tissues and bone of the jaws;
 - H.U41. diagnose clinical oral neoplasms;
 - H.U42. recognise and differentiate salivary gland diseases;
 - H.U43. diagnose and differentiate diseases of the maxillary sinuses;
 - H.U44. diagnose viral infections in dentistry, including hepatotropic, HIV and droplet-transmitted infections;
 - H.U45. assess the clinical condition of periodontal tissues and the radiological semiology of periodontopathy;
 - H.U46. recognise symptoms of systemic diseases in the oral cavity;

- H.U47. apply professional methods of prevention of periodontal and peri-implant diseases;
- H.U48. perform non-surgical treatment of periodontitis and peri-implantitis;
- H.U49. plan topical and general pharmacological treatment for periodontitis and peri-implant disease;
- H.U50. recognise and treat acute periodontal conditions;
- H.U51. plan antibiotic prophylaxis in patients with coexisting systemic diseases;
- H.U52. prepare the patient for the dental procedure;
- H.U53. immobilise teeth;
- H.U54. plan comprehensive treatment of advanced periodontitis;
- H.U55. diagnose and treat selected diseases of the oral mucosa;
- H.U56. diagnose and carry out the management of maxillary cysts, inflammatory lesions of the bone and soft tissue of the craniofacial part, potentially malignant disorders of the oral cavity and tumours of the oral cavity and salivary glands;
- H.U57. carry out oncology education and prevention targeting head and neck cancers;
- H.U58. carry out a minimal anti-smoking intervention;
- H.U59. collect specimens for microbiological or mycological examination;
- H.U60. plan prosthetic treatment for individual missing teeth;
- H.U61. treat simple prosthetic cases with the use of crown and root inlays, prosthetic crowns and bridges;
- H.U62. treat simple prosthetic cases with removable plate partial and complete dentures;
- H.U63. perform temporary fixed dentures;
- H.U64. treat simple prosthetic cases with skeletal dentures, overdentures and immediate dentures;
- H.U65. repair a damaged prosthetic restoration in clinical and laboratory settings;
- H.U66. recognise and prevent functional disorders of the masticatory organ;
- H.U67. plan and integrate gerostomatological treatment;
- H.U68. carry out dental treatment in a patient with a disability;
- H.U69. plan implantoprosthesis treatment;
- H.U70. plan and carry out basic treatment procedures as part of integrated dental treatment of adult patients;
- H.U71. carry out procedures in various dental specialties;
- H.U72. plan procedures in cosmetic dentistry;
- H.U73. maintain the patient's medical records;
- H.U74. adjudicate temporary incapacity for dental reasons and issue related medical certificates.

IV. METHOD OF VERIFICATION OF ACHIEVED LEARNING OUTCOMES

1. Verification of achieved learning outcomes requires the use of a variety of forms of examination appropriate to the categories of knowledge, skills and social competence to which these outcomes relate.

2. Achieved learning outcomes in the knowledge category can be verified through written or oral examinations.
3. Essays, reports, short structured questions, Multiple Choice Questions (MCQs), Multiple Response Questions (MRQs), Yes/No choice tests or matching answers can be used as forms of written examinations.
4. Examinations should be standardised and aimed at testing knowledge at a higher level than mere knowledge of the issues (level of understanding of the issues, ability to analyse and synthesise information and problem solving).
5. Verification of the achieved learning outcomes in the category of skills in professional communication with the patient in class groups D, E and F takes place in the form of a practical examination conducted in a simulated setting, including a simulated patient, or in a clinical setting, using observation sheets or checklists.
6. Verification of achieved learning outcomes in the skills category in class groups E, F and H requires direct observation of the student demonstrating the skill during a traditional clinical examination and Objective Structured Clinical Examination (OSCE). The OSCE examination is required as a form of verification of learning outcomes in the skills category achieved throughout the course of study and takes place in the fifth year of study.