

SYLLABUS

1. General information on the course

Full course name	Європейський досвід вигодовування дітей раннього віку
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра педіатрії
Author(s)	Holiuk Kateryna Olehivna
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Semester	18 weeks across 5 semester
Workload	5 ECTS, 150 hours. For full-time course 36 hours are working hours with the lecturer (36 hours of seminars), 114 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for study programme "Medicine"
Prerequisites	Human Anatomy, Microbiology, Virology and Immunology, Human Physiology, Pathophysiology, Pharmacology
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

The goal of the educational discipline is to achieve students modern knowledge and professional skills in feeding a healthy young child based on the study of modern approaches to the principles of feeding young children in our country and peculiarities in European countries from the standpoint of the evidence base.

4. Contents

Module 1. Feeding and nutrition of healthy young children
Topic 1 Introduction. Definition of the concept of discipline. Regulatory documents governing the principles of feeding infants

<p>Topic 2 Morpho-functional features of breastfeeding regulation.</p> <p>Anatomical and physiological features of the gastrointestinal tract in infants. Neuroendocrine mechanisms of lactopoiesis regulation.</p>
<p>Topic 3 Nutrition of pregnant women. Features of nutrition for lactating women.</p> <p>The importance of the main food ingredients for the child's body Nutrition during complicated pregnancies. Nutrition for lactating women.</p>
<p>Topic 4 Breastfeeding.</p> <p>Biological significance of breastfeeding. Importance of essential nutrients for the child's body.</p>
<p>Topic 5 Breastfeeding.</p> <p>Immunobiological role of human milk. Quantitative and qualitative composition of female mature and transitional milk, colostrum. Comparative characteristics of human breast milk with goat's and cow's milk</p>
<p>Topic 6 Breastfeeding of infants.</p> <p>Indications and contraindications for breastfeeding. Hypogalactia. Types of hypogalactia, methods of prevention and treatment. Care of the mammary gland.</p>
<p>Topic 7 Breastfeeding of infants.</p> <p>10 principles of successful breastfeeding by WHO and UNICEF. Basic rules of successful breastfeeding. Signs of proper attachment of the child to the mother's breast. Methodology for calculating daily and single food rates. The need for proteins, fats, carbohydrates and kilocalories.</p>
<p>Topic 8 Breastfeeding of infants.</p> <p>Complementary feeding during breastfeeding. Concept of complementary feeding, indications. Rules for introducing complementary feeding, timing, types. Difference between complementary feeding and supplementary feeding.</p>
<p>Topic 9 Breastfeeding of infants.</p> <p>Peculiarities of feeding premature babies.</p>
<p>Topic 10 Artificial feeding of children.</p> <p>Concept. Basic principles of implementation. Characteristics of modern adapted and non-adapted infant formulas.</p>
<p>Topic 11 Artificial feeding of children.</p> <p>Regimen and technique of artificial feeding. Introduction of complementary feeding in artificial feeding. Timing, rules.</p>
<p>Topic 12 Mixed feeding of children.</p> <p>The concept of mixed feeding. Indications for mixed feeding. Mode and technique of mixed feeding. Rules for the introduction of complementary feeding.</p>

<p>Topic 13 Nutrition of children from 1 to 3 years</p> <p>Principles of nutrition for children over one year old, need for food ingredients, feeding frequency.</p>
<p>Topic 14 Nutrition of children aged 1 to 3.</p> <p>Basic food products for children over one year old. The need for breastfeeding in children over one year old.</p>
<p>Topic 15 Physical development disorders associated with nutritional status.</p> <p>Principles of assessing a child's physical development - anthropometric measurements, growth charts.</p>
<p>Topic 16 Physical development disorders associated with nutritional status.</p> <p>Correction of physical development disorders related to nutrition. Dietary supplements of iron, calcium, vitamin D, iodine, vitamin A.</p>
<p>Topic 17 Food allergy.</p> <p>Manifestations of food allergy in young children, causes, prevalence. The main products that lead to food allergies.</p>
<p>Topic 18 Final modular control.</p>

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	Be able to analyze, interpret and use in practical activities knowledge of the current state of problems and achievements in the field of children's nutrition, basic principles of feeding young children from the standpoint of evidence-based medicine.
LO2	Be able to interpret, analyze and summarize data on the effectiveness of different types of feeding.
LO3	Choose and use modern approaches to the principles of feeding young children, based on the positions of evidence-based medicine.
LO4	Determine the diet, the daily or one-time amount of food, the timing of introducing the healthy child's diet and prescribe the necessary nutrition in the treatment of childhood diseases from the standpoint of evidence-based medicine.
LO5	Be able to apply knowledge of general and professional disciplines in professional activities.
LO6	Be able to determine the nature of nutrition in the treatment and prevention of diseases
LO7	Be able to assess the physical development of a child of the appropriate age and gender, using graphs, centile tables, scales.

7. Soft Skills

SS1	Ability to learn and master modern knowledge
SS2	Ability to abstract thinking, analysis and synthesis
SS3	Ability to apply knowledge in practical situations.
SS4	Knowledge and understanding of the subject area and understanding of professional activity.
SS5	Ability to make informed decisions.
SS6	Ability to work in a team.
SS7	Ability to adapt and act in a new situation.
SS8	Ability to interpersonal interaction

8. Teaching and learning activities

Topic 1. Introduction. Definition of the concept of discipline.
pr.tr.1 "Introduction. Definition of the concept of discipline." (full-time course) Normative documents regulating the principles of feeding young children (Prescript No. 149 of March 20, 2008 "On the approval of the Clinical Protocol for the medical care of a healthy child under 3 years of age", etc.).
Topic 2. Morpho-functional features of breastfeeding regulation.
pr.tr.2 "Morphofunctional aspects of feeding" (full-time course) Morpho-functional features of digestive organs and metabolism in children in the age aspect from the standpoint of adaptation to breastfeeding. Morpho-functional features of the mammary gland, neuroendocrine regulation of lactation.
Topic 3. Nutrition of pregnant women. Features of nutrition for lactating women.
pr.tr.3 "Natural feeding and its importance for the health of the child and mother." (full-time course) Biological significance of breastfeeding. The importance of the main food ingredients for the child's body. The main provisions on feeding children, its importance for the health of the child, modern views on this problem and the main provisions.
Topic 4. Breastfeeding.
pr.tr.4 "Peculiarities of nutrition of pregnant women and lactating mothers." (full-time course) Nutrition of a pregnant woman. Nutrition during complicated pregnancy. Nutrition of lactating mothers.
Topic 5. Breastfeeding.
pr.tr.5 "Immunobiological value of human milk." (full-time course) Quantitative and qualitative composition of female mature and transitional milk, colostrum. Comparative characteristics of human breast milk with goat's and cow's milk.
Topic 6. Breastfeeding of infants.

pr.tr.6 "Indications and contraindications for breastfeeding. Hypogalactia." (full-time course)
Indications and contraindications for breastfeeding. Types of hypogalactia, methods of prevention and treatment. The concept of lactation crises. Indications and contraindications for breastfeeding. Peculiarities of mammary gland care – preparation for lactation, prevention of mastitis, hypogalactia.

Topic 7. Breastfeeding of infants.

pr.tr.7 "Natural feeding of children in the first six months." (full-time course)
Counseling of the mother on feeding a child under 6 months of age. 10 principles of successful breastfeeding by WHO and UNICEF. Basic rules of successful breastfeeding. Signs of proper attachment of the child to the mother's breast. Signs of effective suction. Assessment of breastfeeding. Peculiarities of feeding children in the first two weeks of life and from two weeks to a year. Methods of calculating the daily and one-time amount of food. The need for proteins, fats, carbohydrates and kilocalories. Solving situational problems (analysis of clinical cases).

Topic 8. Breastfeeding of infants.

pr.tr.8 "Complementary feeding during breastfeeding." (full-time course)
Counseling of the mother on feeding a child aged 6 to 12 months. The concept of complementary feeding, indications. Signs of the child's readiness to introduce complementary feeding. Rules for the introduction of complementary feeding, terms, products. The difference between supplementary and complementary food. The concept of nutritional correction. Rules, terms of introduction of juices. Drawing up a menu for a child aged 6 to 12 months for 1 day. Solving situational problems (analysis of clinical cases).

Topic 9. Breastfeeding of infants.

pr.tr.9 "Natural feeding of premature babies." (full-time course)
Peculiarities of feeding premature babies. Physiological and medical aspects related to preterm birth and their impact on infant feeding. Peculiarities of the composition of breast milk in the case of children born prematurely compared to children born on time. Anthropometric indicators that should be taken into account when determining the optimal feeding regimen for premature babies. Making a menu for a child for 1 day. Solving situational problems (analysis of clinical cases).

Topic 10. Artificial feeding of children.

pr.tr.10 "Artificial feeding of children." (full-time course)
Concept. Indications for artificial feeding. Basic rules of conduct. Characteristics of modern adapted and non-adapted infant milk formulas.

Topic 11. Artificial feeding of children.

pr.tr.11 "Artificial feeding of children." (full-time course)
Mode and technique of artificial feeding. Introduction of supplementary food during artificial feeding. Terms, rules. The child's daily need for proteins, fats, carbohydrates and calories during artificial feeding. Making a menu for a child for 1 day. Solving situational problems (analysis of clinical cases).

Topic 12. Mixed feeding of children.

pr.tr.12 "Mixed feeding of children." (full-time course)

The concept of mixed feeding. Indications for mixed feeding. Basic rules of conduct. Mode and technique of mixed feeding. Technique and rules of feeding. Milk mixtures used for feeding. Schemes of mixed feeding of children of the first year of life. Supplementation and nutritional correction. The child's daily need for proteins, fats, carbohydrates and calories during mixed feeding. Making a menu for a child for 1 day. Solving situational problems (analysis of clinical cases).

Topic 13. Nutrition of children from 1 to 3 years

pr.tr.13 "Nutrition of children from 1 to 3 years" (full-time course)

Counseling of the mother on the nutrition of the child aged 12 months to 3 years. Principles of nutrition for children older than one year, need for food ingredients, frequency of feeding. Main products. Making a menu for a child for 1 day. Solving situational problems (analysis of clinical cases).

Topic 14. Nutrition of children aged 1 to 3.

pr.tr.14 "Violations of physical development are related to nutritional status" (full-time course)

Basic food products for children older than one year. The need for breastfeeding in children older than one year. Formation of healthy eating habits and provision of balanced nutrition for children. Questions about additional dietary restrictions or food preferences of the child. Ensuring adequate fluids and drinks are best for children at this age. The influence of nutrition on the development of the immune system and general health of children from 1 to 3 years.

Topic 15. Physical development disorders associated with nutritional status.

pr.tr.15 "Violations of physical development are related to nutritional status" (full-time course)

Correction of physical development disorders related to nutritional status. Principles of assessment of physical development of children of different age groups and gender characteristics. Use of WHO physical development assessment schedules. Solving situational problems (analysis of clinical cases).

Topic 16. Physical development disorders associated with nutritional status.

pr.tr.16 "Food supplements for children." (full-time course)

Food supplements of iron, calcium, with vitamin D, iodine, vitamin A.

Topic 17. Food allergy.

pr.tr.17 "Food allergy." (full-time course)

Food allergy. Manifestations of food allergy in young children, causes, prevalence. The main products that lead to food allergies. Making a menu for a child for 1 day. Solving situational problems (analysis of clinical cases).

Topic 18. Final modular control.

pr.tr.18 "Final modular control." (full-time course)

Practically oriented differentiated assessment will include questions for the entire feeding course, including: theoretical questions, questions for computer test control and a practical part. The class will be held in the classroom. First, students answer theoretical questions in written or oral form, followed by their discussion and defense, then take a test computer control. The practical part of the assessment session will include a demonstration by the student of the practical skills he has mastered while studying the discipline. The class is planned to be held in a simulation center (demonstration of correct attachment of a child to the breast, etc.) and in the absence of quarantine - assessment of feeding in children undergoing treatment in hospital departments, in addition, the practical part includes drawing up a menu for a child for one day, depending from her age and type of feeding. The overall grade for the assessment will be assigned based on the results of all three component parts of the assessment.

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

TM1	Case-based learning
TM2	Team Based Learning
TM3	Practical training
TM4	Self-study
TM5	Electronic learning
TM6	Research Based Learning

Practical classes allow students to plan and develop options for feeding tactics from the standpoint of evidence-based medicine and evaluate the effectiveness of feeding a healthy child. Analysis of specific situations will allow to determine feeding tactics. Practice-oriented learning will develop students' skills of independent learning, synthesis and analytical thinking.

Studying the discipline develops students' ability of abstract thinking, analysis and synthesis; the ability to learn, master modern knowledge and apply it in practical situations; ability to use information and communication technologies; creativity.

9.2 Learning activities

LA1	Preparation for practical classes and their implementation
LA2	Preparation for current and final control
LA3	Analysis of clinical cases
LA4	Individual research project (preparation and demonstration of multimedia presentations)
LA5	Work with textbooks and relevant information sources
LA6	Electronic training in Google Meet, Viber, Telegram, MIX learning, TytoCare systems
LA7	Practicing practical skills in the simulation center

10. Methods and criteria for assessment

10.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Mutual assessment (Peer assessment)	Partnership interaction aimed at improving the results of educational activities by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities	During the entire period of studying the discipline	Correcting approaches to learning together with students, taking into account the results of the assessment
FA2 Final testing	A method of effective verification of the level of assimilation of knowledge, abilities and skills in an educational discipline. Testing allows you to check the results of training after completing the discipline.	In the penultimate discipline lesson	The maximum number of points for the test is 10 points, provided that 100% of the answers are correct. The minimum score for successfully passing the tests is 6 points (60% of correct answers)

<p>FA3 Consulting the teacher during the preparation of an individual research project (speech at a conference, competition of scientific papers)</p>	<p>An important factor in the formation of professional qualities of future specialists is the research work of students. Involvement in research activities contributes to the formation of a scientific worldview, work capacity, industriousness, initiative, etc.</p>	<p>During the entire period of studying the discipline</p>	<p>Verbal comments of the teacher. The student is given additional incentive points (from 5 to 10), depending on the type of research project</p>
<p>FA4 Instructions of the teacher in the process of performing practical tasks</p>	<p>The guidelines reveal the methods of pedagogical control over the professional activities of applicants. Effectiveness is determined by compliance with all stages of performance of practical tasks. The effectiveness of the formation of the necessary practical skills and abilities depends on the level of formation of practical competence</p>	<p>The entire period of studying the discipline</p>	<p>Counseling students in working with a standardized patient</p>
<p>FA5 Survey and teacher's oral comments based on his results</p>	<p>Provides an opportunity to identify the state of the students' educational experience in accordance with the set goals, to find out the prerequisites for the state of formation of the obtained results, the causes of complications, to adjust the learning process, to track the dynamics of the formation of learning results and to forecast their development.</p>	<p>During the entire period of studying the discipline</p>	<p>According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants</p>
<p>FA6 Solutions of clinical cases</p>	<p>The case method makes it possible to reveal and form the qualities and abilities of medical students necessary for further work, forms clinical thinking, analytical abilities, independence in decision-making, communication, skills for working with a sufficiently large amount of information.</p>	<p>During the entire period of studying the discipline</p>	<p>Assessment of the student's ability to think clinically, justify their decisions, clearly express their opinions, determine the level of theoretical training, which is reflected in the corresponding assessment</p>

FA7 Tests (automated tests) to control the educational achievements of applicants	A method of effective verification of the assimilation of knowledge, abilities and skills from each topic of the educational discipline. Testing allows you to check the assimilation of educational material from each subject.	The entire period of studying the discipline	The student must provide 60% of the correct answers, which is an admission to the practical part of the lesson
FA8 The task of assessing the level of theoretical training	Assessment of acquired theoretical knowledge on the subject of the discipline. It is conducted at each practical lesson in accordance with the specific goals of each topic based on a comprehensive assessment of the student's activity, which includes monitoring the level of theoretical training, performing independent work according to the thematic plan	During the entire period of studying the discipline	Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired theoretical knowledge
FA9 Practical skills test	Practicing practical skills on mannequins, filling in relevant WHO charts and tables	During the entire period of study. At the last lesson, the student must successfully complete the pr	Successful performance of practical skills is an admission to the assessment. The maximum number of points is 20, the minimum is 12

10.3 Summative assessment

	Description	Deadline, weeks	Feedback
SA1 Final control (FC): practical-oriented differentiated assessment (in accordance with the regulations)	Compilation of practical-oriented differential assessment. Applicants who have successfully mastered the material from the discipline and passed the final computer test are allowed to take the test	The last discipline lesson	The applicant can receive 80 points for the credit. The minimum number of points a student must receive is 48 points
SA2 Final testing	A method of effective verification of the level of assimilation of knowledge, abilities and skills from an educational discipline. Testing allows you to check the results of training during the cycle and determine the level of knowledge at the end of the discipline.	Final computer test at the end of the discipline (10 points)	It is an admittance to the differential assessment

SA3 Assessment of the level of theoretical training	Forms the skills of independent activity in students, encourages them to strive for exploratory knowledge. Stimulates students to work with the necessary literature, transfers the learning process from the level of passive absorption of information to the level of active transformation of it	During the entire period of studying the discipline	It is conducted at each lesson, the result of the LA affects the comprehensive assessment for the practical lesson
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Form of assessment:

	Points	Minimum points	Можливість перескладання з метою підвищення оцінки
5 semester	200 scores		
SA1. Final control (FC): practical-oriented differentiated assessment (in accordance with the regulations)	64		
answer to theoretical tasks, performance of practical skills (2x32)	64	19	No
SA2. Final testing	16		
	16	10	No
SA3. Assessment of the level of theoretical training	120		
assessment of written works, oral examination, clinical cases, practical skills	120	72	No

The grade for the discipline is defined as the sum of points for the current educational activity (at least 72) and points for the final module control (at least 48). The number of points for the current activity is calculated according to the formula $100 \times \frac{\text{average arithmetic performance of the student in the 4-point evaluation system}}{5}$. A student receives a maximum of 16 points for diagnostic testing. The minimum number of points a student must receive is 10 points. The maximum number of points for the current educational activity of the student is 120. The student is admitted to the credit provided that the requirements of the educational program are met and if he has scored at least 72 points for the current educational activity. The final module control is conducted at the end of the academic semester in the form of a written assessment, while the grade "5" corresponds to 80 points, "4" - 64 points, "3" - 48 points, "2" - 0 points. In case of an unsatisfactory result for the final module control, the student has the right to retake the assessment. Students who did not appear for the assessment without a good reason are considered to have received an unsatisfactory grade. A student's refusal to complete the final module task is certified as an unsatisfactory response. The possibility of re-crediting the points obtained under the system of non-formal education is provided in accordance with the Regulations.

11. Learning resources

11.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library funds
MTS3	Computers, computer systems and networks
MTS4	KNE "Children's Clinical Hospital of St. Zinaida" SCC, pediatric department
MTS5	Software (to support distance learning, Internet surveys, virtual laboratories, virtual patients, to create computer graphics, modeling, etc.)
MTS6	Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens, smartboards, etc.)

11.2 Information and methodical support

Essential Reading	
1	Nelson Textbook of Pediatrics [Text] / R. M. Kliegman [et al.] ; ed. R. E. Behrman. - 21th ed. - Edinburgh [etc.] : Elsevier, 2020.
2	Propaedeutic pediatrics: a textbook for students of higher medical educational institutions / Edited by V.G. Maidannyk. - Second edition, corrected and supplemented. – Vinnytsia: Nova kniga, 2018. – 872 p.
3	Nutrition of children of the first years of life (0-23 months) / Katilov O.V., Varzar A.V. Belousova O.Yu. – Vinnytsia: New Book, 2019. 64 p.
4	Study guide for students' independent work "General principles and algorithms of catamnestic observation of children with perinatal pathology"/ Holiuk K.O. - Kharkiv, 2020. - 46 p.
5	Mavrupulo, T. Premature babies. Transition from intensive to outpatient care (part I) [Text] / Mavrupulo T. // With care for the child. — 2019. — No. 3. — P. 6-9.
Supplemental Reading	
1	Methodical guidelines for the discipline "Pediatrics Propedeutics": for students. special 7.110101 "Medical business" full-time education. Part 3 "Feeding children" / O.I. Smiyan, V. A. Gorbas, P. I. Sichnenko. Sumy State University, 2017. - 39 p.
2	Rai,Preeti Lata, et al. "Effect of counseling on breast feeding practices" Indian Journal of Child Health 1.2 (2014) : 54 - 60.
3	Opanasyuk, N.V. Breastfeeding - the guarantee of a child's health [Text] / N. V. Opanasyuk, A. V. Kupriyanenko // Master of Nursing: Ukrainian Scientific and Practical Journal; Publication language: Ukrainian, Russian, English / Founder: Zhytomyr Institute of Nursing. — 2019. — No. 1. — P. 87-90.
4	Duka, K.D. Breastfeeding of children. Reality and problems [Text] / K. D. Duka, S. I. Ilchenko, N. M. Kramarenko // Pediatrics, obstetrics and gynecology: Scientific and practical journal; Entered by the HAC into the List of Scientific and Professional Publications of Ukraine in the field of "Medical Sciences"; Language: Ukrainian, Russian / Founder: Association of Pediatricians of Ukraine, Association of Obstetricians and Gynecologists of Ukraine. — 2014. — No. 1. — P. 43-45.
Web-based and electronic resources	

1	Линник С.О., Дудіна О.О., Терещенко А.В. Впровадження сучасних принципів грудного вигодовування дітей в Україні. Україна. Здоров'я нації. 2013; 1 (25): 7-13. doi 10.15574/PP.2017.72.78 Електронне посилання: https://med-expert.com.ua/journals/scezhivanie-grudnogo-moloka-sovremennye-metody/
2	Шадрін О.Г., Добрянський Д.О., Няньковський С.Л., Клименко В.А, Белоусова О.Ю., Івахненко О.С. Сучасні тенденції в харчуванні дітей раннього віку (12-36 міс.): Європейський та світовий досвід. Здоровье ребенка. 2013; 2(45). Електронне посилання: http://www.mif-ua.com/archive/article/35828
3	Horta B.L., de Mola C.L., Victora C.G. Breastfeeding and intelligence: a systematic review and meta-analysis. Acta Paediatrica. 2015. Dec; 104(467): 14-19. doi: 10.1111/apa.13139. Електронне посилання: https://pubmed.ncbi.nlm.nih.gov/26211556/