

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES
AT VILNIUS UNIVERSITY**

Scientific Area/eas, Field/ds of Science	Medical and Health Sciences (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Clinical Medicine Clinic of Obstetrics and Gynecology			
Course unit title (ECTS credits, hours)	Female Age-related Physiological and Pathological Changes 7 credits (189 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	1	6
Method of the assessment (in 10 point system)	Presentation and assessment of the thesis on maternal and child health. The topic of the thesis is defined with one of the consulting lecturers. The doctoral student presents the thesis during the meeting of the Clinic of Obstetrics and Gynecology or the clinical conference of the Center for Obstetrics and Gynecology of Vilnius University Hospital. The doctoral student must analyze, review, and present the latest scientific publications related to the target topic or provide an analysis of a clinical case. The report is evaluated on a 10-point scale: 10 - excellent; 9- very good; 8- well; 7 - on average; 6 - satisfactory; 5 - weakly; 4 - 1 point - unsatisfactory. The criteria to be assessed - content of the report (idea/hypothesis, clearly stated purpose, explanation of the literature search strategy, provided analysis of the clinical case, clarity of results and conclusions), technical / visual presentation (clarity of tables and figures, compliance with literature citation requirements, the text without grammatical and style errors, presentation visually appealing), presentation of the report (ability to participate in discussion, question management, oratory skills).			
PURPOSE OF THE COURSE UNIT				
The doctoral student will be able to know the periods of female reproductive function, age-related clinical and hormonal changes, to differentiate physiological and pathological changes from menarche to menopause and in the postmenopausal period, to know the main pathological conditions and diseases related to a woman's age, diagnostics, management and treatment. The doctoral student will be able to manage the principles of menopausal hormone therapy and contraindications, to know the principles of women's health screening programs in Lithuania. The doctoral student will be able to understand the physiological and pathological changes that occur during pregnancy and postpartum period.				
THE MAIN TOPICS OF COURSE UNIT				
<u>Anatomy and physiology of the female reproductive system.</u> Structure of the ovaries, folliculogenesis, ovulation. The structure of the fallopian tube. Uterine topography, position and fixation, uterine ligaments. Positions of the uterus. Cyclic changes of the endometrium. External and internal structure of the vagina. Female external genital organs. Perineum – anatomical borders and muscles. Female sex hormones. Hormone biosynthesis, metabolism and mechanism of action. Structure				

of gonadotropic hormones. Endocrine regulation of the menstrual cycle. Changes during the menstrual cycle, phases of the cycle.

Peculiarities of paediatric and adolescent gynaecology. Vulval and vaginal disorders in prepubertal females. Disorders of puberty - premature puberty, delayed puberty. Disorders of the menstrual cycle during puberty, peculiarities of hormone treatment in girls.

Pregnancy and childbirth. Maternal physiological changes during pregnancy in different systems (reproductive, cardiovascular, digestive, respiratory, musculoskeletal, hematological changes). Changes in vaginal flora during pregnancy, vaginal candidiasis, bacterial vaginosis. Asymptomatic bacteriuria during pregnancy. Labour and delivery. Physiology of the childbirth. The stages of labour and birth, the care during childbirth, biomechanism of labour. Postpartum period - physiological changes (reproductive system - uterus, vagina, perineum, breast; renal and urinary tract). Pathology of the postpartum period -lactostasis, endometritis, mastitis, sepsis.

Causes of infertility, diagnosis, treatment. Possibilities of assisted reproduction in Lithuania.

Perimenopause, premenopause and postmenopause. Changes of menstrual cycles during these periods. The onset of natural menopause. Definition and frequency of early menopause. Induced menopause. Factors affecting the aging. Quality of woman life during perimenopause and postmenopause. Peculiarities of doctor's communication with a patient. The most common menopausal symptoms. Early menopausal symptoms: vasomotor symptoms, mood swings, sexual symptoms. Intermediate symptoms associated with aging of the urinary and genital organs (vaginal dryness, vulvar pruritus and burning, stress urinary incontinence, painful intercourse, urogenital atrophy). Changes of the woman's body and tissues due to estrogen deficiency. Late symptoms in menopause: diseases of the cardiovascular system, osteoporosis, dementia and cognitive decline, Alzheimer's disease. Atypical symptoms of menopause. Cardiovascular disease and menopause. Epidemiological studies, their interpretation and application in clinical practice. The role of estrogens in the prevention of cardiovascular disease. Osteoporosis: Causes of primary and secondary osteoporosis. Bone mineral density. The rate of bone loss. Risk factors for bone fractures. Criteria for the diagnosis of osteoporosis. General measures for the prevention of osteoporosis. Central nervous system and menopause. Alzheimer's disease. Menopausal hormone therapy (MHT). Basic principles of treatment in the presence and absence of the uterus. Peculiarities of perimenopausal treatment. Peculiarities of postmenopausal treatment. Clinical assessment before MHT. Benefits and risks of MHT. Contraindications of MHT. MHT and extragenital female pathology. MHT and cancer risk. MHT and osteoporosis. MHT and the risk of coronary heart disease. Non-estrogen-based approaches and therapies for menopausal symptoms. Selective estrogen receptor modulators. Phytoestrogens, principle of action, indications for administration. Evaluation of the effectiveness of treatment. Evaluation of endometrium in the postmenopausal period: indications, diagnostic methods. Guidelines for the diagnosis and treatment of endometrial pathology in postmenopausal women. Diagnostics of postmenopausal uterine bleeding and endometrial pathology. Indications for endometrial biopsy. Indications for hysterosonography. Endometrium assessment in asymptomatic postmenopausal women.

RECOMMENDED LITERATURE SOURCES

1. Williams Gynecology. Hoffman BL, Schorge JO, Halvorson LM, Hamid CA, Corton MM, Schaffer JI. 4e. McGraw Hill, 2020.

<https://accessmedicine.mhmedical.com/content.aspx?bookid=2658§ionid=21759985>.

2. Menopauzė. Menopauzinė hormonų terapija (MHT) klinikinės rekomendacijos, 2021. https://lagd.lt/data/public/uploads/2021/06/d1_menopauze.pdf.
3. Nevaisingumo diagnostikos ir gydymo metodika (2019). https://sam.lrv.lt/uploads/sam/documents/files/Nevaisingumo%20metodika%20SAM_2019-07-22.pdf
4. Kontracepcijos metodika 2016. https://sam.lrv.lt/uploads/sam/documents/files/Veiklos_sritys/Kontracepcijos_metodika_2016-11-22.pdf.
5. Williams Obstetrics. F. G. Cunningham, K. J. Leveno, J.S. Dashe, B. L. Hoffman, C. Y. Spong, B. M. Casey. 26th ed. Mc Grow Hill Education 2022. The McGraw-Hill Companies; <https://accessmedicine.mhmedical.com/book.aspx?bookID=2977>
6. Bumbulienė Z, Sragyte D, Klimasenko J, Bumbul-Mazurek E. Abnormal uterine bleeding in adolescents: ultrasound evaluation of uterine volume. Gynecol Endocrinol. 2019 Apr;35(4):356-359. doi: 10.1080/09513590.2018.1538345. Epub 2018 Nov 27.
7. Rees M et al. The essential menopause curriculum for healthcare professionals: A European Menopause and Andropause Society (EMAS) position statement. Maturitas 2022 Apr;158:70-77. doi: 10.1016/j.maturitas.2021.12.001. Epub 2022 Feb 1.
8. Xiaoming W, Jing L, Yuchen P, Huili L, Miao Z, Jing S. Characteristics of the vaginal microbiomes in prepubertal girls with and without vulvovaginitis. Eur J Clin Microbiol Infect Dis. 2021 Jun;40(6):1253-1261. doi: 10.1007/s10096-021-04152-2. Epub 2021 Jan 16.
9. Standring S. (Ed.). Gray's Anatomy: The anatomical basis of clinical practice. 42th ed. 2021. Churchill Livingstone
10. McGrath IM, Mortlock S, Montgomery GW. Genetic Regulation of Physiological Reproductive Lifespan and Female Fertility. Int J Mol Sci. 2021 Mar 4;22(5):2556. doi: 10.3390/ijms22052556.
11. Zhu D, Montagne A, Zhao Z. Alzheimer's pathogenic mechanisms and underlying sex difference. Cell Mol Life Sci. 2021 Jun;78(11):4907-4920. doi: 10.1007/s00018-021-03830-w. Epub 2021 Apr 12.
12. Romeikienė KE, Bartkevičienė D. Pelvic-Floor Dysfunction Prevention in Prepartum and Postpartum Periods. Medicina (Kaunas). 2021 Apr 16;57(4):387. doi: 10.3390/medicina57040387.

CONSULTING LECTURERS

1. Coordinating lecturer: Diana Ramašauskaitė (Prof. Dr.).

2. Žana Bumbulienė (Prof. Dr.).

3. Daiva Bartkevičienė (Assoc. Prof. Dr.).

4. Mindaugas Šilkūnas (Prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė