



Pomorski Uniwersytet Medyczny w Szczecinie

SYLLABUS of the MODULE (SUBJECT) HISTOLOGY AND EMBRYOLOGY

General Information

| Module title: | |
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| Module type | Obligatory |
| Faculty PMU | Faculty of Medicine and Dentistry |
| Major | Medicine |
| Level of study | long-cycle (S2J) |
| Mode of study | full-time studies provided in English |
| Year of studies, semester | I year, semester 1 and 2 |
| ECTS credits (incl. semester breakdown) | 11 (5/6) |
| Type/s of training | Lectures: 21h: I sem: (8h + e-learning 3h); II sem: (6h + e-learning 4h). Seminars: 6h: I sem: 3h + II sem: 3h. Practical: 58h: I sem: 30h + II sem: 28h. Σ 85. |
| Form of assessment* | <input checked="" type="checkbox"/> final examination <input checked="" type="checkbox"/> test (theoretical 1 st term, 1 st and 2 nd re-take) <input checked="" type="checkbox"/> practical (practical 1 st term, 1 st and 2 nd re-take) |
| Head of the Department/ Clinic, Unit | Assoc. Prof. Aleksandra Wilk, PhD |
| Tutor responsible for the module | Sylwia Rzeszotek, PhD sylwia.rzeszotek@pum.edu.pl 663-861-490 |
| Department's/ Clinic's/ Unit's website | https://www.pum.edu.pl/studia_iii_stopnia/informacje_z_jednostek/wmis/katedra_i_zakad_histologii_i_embriologii/ |
| Language | English |

* replace into where applicable

Detailed information–

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|--------------------------|---|-------------|---|
| Module objectives | <p>The primary goal of teaching histology is to integrate knowledge from basic disciplines with clinical sciences, including understanding the causes, mechanisms and effects of many diseases. The student knows the morphology of normal cells, tissues and organs and sees that their structure is closely related to their function.</p> <p>The purpose of teaching embryology is to present the development of embryo and fetus, with particular emphasis on the first weeks. This is particularly important for future doctors because many pharmacological and environmental substances have an impact on development of germ layers and, consequently, formation of defects in tissues and organs.</p> <p>Particular attention was paid to the stages of development of the fetus and human organs. The main goal of teaching embryology is to learn the main causes, types and mechanisms of defects, as well as to characterize the factors causing the above-mentioned defects.</p> <p>Main goal of histology and embryology course is to guide the student in understanding the structure of the human body in a topographic and functional approach and to familiarize him with the nomenclature anatomical, histological and embryological. Additionally, the student develops social competences, notices and recognizes own limitations, self-assesses educational deficits and needs. He sees a need to use objective sources of information.</p> | | |
| | Prerequisite /essential requirements | Knowledge | <i>Basic knowledge of the structure and function of human tissues and organs. Knowledge of human embryo/fetal development stages, development of major organs, and what anomalies can occur during organogenesis.</i> |
| | | Skills | <i>Optical microscope operation (including immersion).</i> |
| | | Competences | <i>The habit of self-education. Working in a group.</i> |

| Description of the learning outcomes for the subject /module | | | |
|---|---|---|---|
| No. of learning outcome | Student, who has passed the (subject) knows /is able to /can: | SYMBOL (referring the standards) | Method of verification of learning outcomes* |
| W01 | Knows and understands the structure of the human body in a topographic and functional approach, including topographic relations between individual organs, including their nomenclature anatomical, histological and embryological; | A.W1 | S, K, O, PS, EPR ET |
| W02 | Knows cellular structures and their functional specializations | A.W2 | |
| W03 | Knows microarchitecture of tissues, extracellular matrix and organs; | A.W3 | |
| W04 | Knows development stages of the human embryo, structure and function of fetal membranes and placenta, development stages of individual organs and the impact of harmful factors on development embryo and fetus (teratogenic). | A.W4 | |
| U01 | Can operate an optical microscope, including the use of immersion; | A.U1 | |
| U02 | Can recognize structures corresponding to organs in microscopic images, tissues, cells and cellular structures, describe and interpret them structure and relations between structure and function; | A.U2 | |
| K1 | notices and recognizes own limitations, self-assesses educational deficits and needs; | K.5 | |
| K2 | uses objective sources of information; | K.7 | |

| Table presenting LEARNING OUTCOMES in relation to the form of classes | | | | | | | |
|---|-------------------|------------------|---------|-------------------|------------------|-------------|------------|
| No. of learning outcome | Learning outcomes | Type of training | | | | | |
| | | Lecture | Seminar | Practical classes | Clinical classes | Simulations | E-learning |
| W01 | A.W1 | X | X | | | | X |
| W02 | A.W2 | X | X | | | | X |
| W03 | A.W3 | X | X | | | | X |
| W04 | A.W4 | X | X | | | | X |
| U01 | A.U1 | | | X | | | |
| U02 | A.U2 | | | X | | | |
| K.5 | K5 | X | X | X | | | X |
| K.7 | K7 | X | X | X | | | X |

| Table presenting TEACHING PROGRAMME | | | |
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| No. of a teaching programme | Teaching programme | No. of hours | References to learning outcomes |
| Winter semester | | | |
| Lectures, 8h | | | |
| TK01 | Epithelial tissue. Exocrine glands. | 1 | A.W1, AW2, AW3, AW4. |
| TK02 | Connective tissue. Adipose tissue. | 1 | A.W1, AW2, AW3, AW4. |
| TK03 | Cartilage and bone. | 1 | A.W1, AW2, AW3, AW4. |
| TK04 | Muscle tissue. | 1 | A.W1, AW2, AW3, AW4. |
| TK05 | Blood. Bone marrow. Blood development. | 1 | A.W1, AW2, AW3, AW4. |
| TK06 | Nervous tissue, PNS. | 1 | A.W1, AW2, AW3, AW4. |
| TK07 | Central Nervous System. | 1 | A.W1, AW2, AW3, AW4. |
| TK08 | Lymphatic organs. | 1 | A.W1, AW2, AW3, AW4. |
| Seminars, 3h | | | |
| TK01 | Fertilization, implantation, gastrulation. Fetal membranes. Twins. | 1 | A.W1, A.W4. |
| TK02 | Nervous system development + neural crest cells. | 1 | A.W1, A.W4. |
| TK03 | Endocrine system development. | 1 | A.W1, A.W4. |
| Practical classes, 30h | | | |
| TK01 | Working with case viewer and microscope. | 1 | A.U1, A.U2. |
| TK02 | Epithelial tissue. Exocrine glands. | 2 | A.U1, A.U2. |
| TK03 | Connective tissue. Adipose tissue. | 2 | A.U1, A.U2. |
| TK04 | Cartilage and bone. | 2 | A.U1, A.U2. |
| TK05 | Muscle tissue. | 2 | A.U1, A.U2. |
| TK06 | Blood. Bone marrow. Blood development. | 1 | A.U1, A.U2. |
| TK07 | Practical classes: Slides review before cycle test I. | 1 | A.U1, A.U2. |
| TK08 | Theoretical + practical cycle test I. | 2 | A.U1, A.U2. |
| TK09 | Nervous tissue, PNS. | 2 | A.U1, A.U2. |
| TK10 | Theoretical + practical cycle test I for doctor's leaves. | 1 | A.U1, A.U2. |
| TK11 | Central Nervous System. | 2 | A.U1, A.U2. |
| TK12 | Eye, ear. e-L. | 2 | A.U1, A.U2. |

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| TK13 | Skin. e-L. | 2 | A.U1, A.U2. |
| TK14 | Circulatory System Heart. e-L. | 2 | A.U1, A.U2. |
| TK15 | Lymphatic organs. | 2 | A.U1, A.U2. |
| TK16 | Practical classes: Slides review before cycle test II. | 1 | A.U1, A.U2. |
| TK17 | Theoretical + practical cycle test II. | 2 | A.U1, A.U2. |
| TK18 | Theoretical + practical cycle test II for doctor's leaves. | 1 | A.U1, A.U2. |
| Simulation | | | |
| | Nor applicable. | | |
| E-learning, 3eL | | | |
| TK01 | Eye, ear. e-L. | 1 | A.W1, AW2, AW3, AW4. |
| TK02 | Skin. e-L | 1 | A.W1, AW2, AW3, AW4. |
| TK03 | Circulatory System Heart. e-L | 1 | A.W1, AW2, AW3, AW4. |
| Summer semester | | | |
| Lectures, 6h | | | |
| TK01 | Endocrine System. | 1 | A.W1, AW2, AW3, AW4. |
| TK02 | Tooth and oral cavity. | 1 | A.W1, AW2, AW3, AW4. |
| TK03 | Esophagus, stomach, small and large intestine, appendix. | 1 | A.W1, AW2, AW3, AW4. |
| TK04 | Respiratory system. | 1 | A.W1, AW2, AW3, AW4. |
| TK05 | Teratogenes. | 1 | A.W1, AW2, AW3, AW4. |
| TK06 | Male reproductive system. | 1 | A.W1, AW2, AW3, AW4. |
| Seminars, 3h | | | |
| TK01 | Development of digestive system. | 1 | A.W1, A.W4. |
| TK02 | Urogenital system development. | 1 | A.W1, A.W4. |
| TK03 | Lymphatic organs development. | 1 | A.W1, A.W4. |
| Practical classes, 28h | | | |
| TK01 | Endocrine System. | 1 | A.U1, A.U2. |
| TK02 | Tooth and oral cavity. | 1 | A.U1, A.U2. |
| TK03 | Esophagus, stomach, small and large intestine, appendix. | 2 | A.U1, A.U2. |
| TK04 | Salivary glands, liver, pancreas, gallbladder. | 1 | A.U1, A.U2. |
| TK05 | Practical classes: Slides review before cycle test III. | 1 | A.U1, A.U2. |
| TK06 | Theoretical + practical cycle test III. | 2 | A.U1, A.U2. |
| TK07 | Urinary system. | 2 | A.U1, A.U2. |
| TK08 | Theoretical + practical cycle test III for doctor's leaves. | 1 | A.U1, A.U2. |
| TK09 | Respiratory system. | 1 | A.U1, A.U2. |
| TK10 | Female reproductive system. | 2 | A.U1, A.U2. |
| TK11 | Male reproductive system. | 2 | A.U1, A.U2. |
| TK12 | Practical classes: Slides review before cycle test IV. | 1 | A.U1, A.U2. |
| TK13 | Theoretical + practical cycle test IV. | 2 | A.U1, A.U2. |
| TK14 | Practical classes: Slides review before an exam. | 2 | A.U1, A.U2. |
| TK15 | Theoretical + practical cycle test IV for doctor's leaves. | 1 | A.U1, A.U2. |
| TK16 | Booster 1st term. | 1 | A.U1, A.U2. |
| TK17 | Booster 2nd term. | 1 | A.U1, A.U2. |
| TK18 | Theoretical EXAM. | 2 | A.U1, A.U2. |
| TK19 | Practical EXAM. | 2 | A.U1, A.U2. |
| Simulation | | | |
| | Nor applicable. | | |
| E-learning, 4eL | | | |
| TK01 | Salivary glands, liver, pancreas, gallbladder. e-L. | 1 | A.W1, AW2, AW3, AW4. |

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| TK02 | Urinary system. e-L. | 2 | A.W1, AW2, AW3, AW4. |
| TK03 | Female reproductive system. e-L. | 1 | A.W1, AW2, AW3, AW4. |

| Booklist |
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| Obligatory literature: |
| 1. Junqueira's Basic Histology: Text and Atlas. |
| 2. Before we are born. Essential of Embryology and Birth defects. Keith L. Moore, T.V.N. Persaud, Mark G. Torchia. |
| Supplementary literature: |
| 1. Textbook of Histology. Leslie P Gartner. |
| 2. Langman`s medical embryology. Thirteenth edition. T.W. Sadler: |
| 3. Memorix Histology. J. Balko, Z. Tonar, I. Varga et al. |

| Student's workload | |
|--|------------------------|
| Form of student's activity (in-class participation; activeness, produce a report, etc.) | Student's workload [h] |
| | Tutor |
| Contact hours with the tutor | 85 |
| Time spent on preparation to seminars/ practical classes | 75 |
| Time spent on reading recommended literature | 60 |
| Time spent on writing report/making project | 0 |
| Time spent on preparing to colloquium/ entry test | 60 |
| Time spent on preparing to exam | 80 |
| Other | 0 |
| Student's workload in total | 360 |
| ECTS credits for the subject (in total) | 11 |
| Remarks | |
| | |

* Selected examples of methods of assessment:

EP – written examination

EU – oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O – student's active participation and attitude assessment

SL – lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedia presentation

other...