



Module syllabus: *General histology and histological techniques*

1. Overall information

Module coordinator	dr hab. prof. UŚ Magdalena Rost-Roszkowska
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ECTS	5
Method for the verification of learning outcomes	<p>The final grade for the module is weighted on the average of the following student's activities:</p> <ul style="list-style-type: none">- Active participation in laboratory classes (continuous evaluation of practical skills, tests and reports) (0.7)- Written final exam (0.3) <p>To be awarded a final grade, the student must have passed each activity of the module.</p> <p>Grades: below 51% – fail (F); 52-60% – with minimum academic criteria (E); 61-65% – satisfactory (D); 66-75% – good (C); 76-85% – very good (B), ≥ 85% – excellent (A)</p>

2. Description of student activity and work

Lecture/discussion sessions	
Responsible teacher	dr hab. prof. US Magdalena Rost-Roszkowska, dr hab. Weronika Rupik
Content	<p>The main objective of this module is to present the main features of all types of animal tissues with special emphasis on their functions in organisms to students. The module will also present the methodology and all of the techniques that are commonly used in order to analyse animal tissues using light and fluorescent microscopes.</p> <p>Lectures/discussion sessions comprise the core subjects in general histology, including histological and histochemical techniques.</p> <p>Lecture/discussion session content: Histology as an interdisciplinary subject. Features and roles of epithelial tissue, connective tissue, muscular tissue, nervous tissue. Observation and analysis of histological sections of epithelial, connective, muscular and nervous tissues. Preparing, and obtaining paraffin and cryostat sections of animal tissues. Staining animal tissues with commonly used light microscopic stains in histology and histopathology e.g. hematoxylin and eosin stain, Mallory staining, Azan stain, etc. Histochemical methods: detecting carbohydrates, polysaccharides, proteins, lipids, acid phosphatase, etc. Preparing the animal tissues for analysis using fluorescence microscope using fluorochromes.</p>
Number of didactic hours (contact hours)	20
Literature	Gartner L.P. Textbook of Histology, 4 th Edition, Elsevier 2016-2017. Sorenson R.L. Atlas of Human Histology. A guide to microscopic structure of cells,





	tissues and organs. 2008. Barinov E.F. et al. General histology. 2011. Suvarna K.S. Bancroft's Theory and Practice of Histological Techniques. Elsevier Health Sciences. 2012. Bancroft J.D., Gamble M. Theory and Practice of Histological Techniques. Elsevier Health Sciences. 2008.
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Laboratory	
Responsible teachers	Staff of the Department of Animal Histology and Embryology
Laboratory projects	Project 1. Analysis of histological slides under a light microscope – epithelial tissue, connective tissue, muscle tissue, nervous tissue. Project 2. Analysis of histological slides under a light microscope – animal organs with different combinations of tissues. Project 3. Histological techniques Project 4. Histochemical techniques. Project 5. Fluorescence methods used for detecting animal tissues.
Methodology of laboratory classes	Experiments will be performed in small groups under the supervision of the teacher and will include: <ul style="list-style-type: none">• Designing and accomplishing the procedure• Calculating and presenting the results• Protocols commitment and presentation
Number of didactic hours (contact hours)	45
Literature	Gartner L.P. Textbook of Histology, 4 th Edition, Elsevier 2016-2017. Sorenson R.L. Atlas of Human Histology. A guide to microscopic structure of cells, tissues and organs. 2008. Barinov E.F. et al. General histology. 2011. Suvarna K.S. Bancroft's Theory and Practice of Histological Techniques. Elsevier Health Sciences. 2012. Bancroft J.D., Gamble M. Theory and Practice of Histological Techniques. Elsevier Health Sciences. 2008.

3. Forms of verification

Continuous evaluation of knowledge, activity and practical skills	
Grades	Grades are awarded on a scale of A-F, where A is the best and F is a fail. <u>An excellent performance (A)</u> – the student actively participates in laboratory work, demonstrates an excellent understanding of the experimental procedures (its aims, sequence and outcomes) is engaged and creative in solving current problems and in an assessment and presentation of results. <u>A good performance (C)</u> – the student demonstrates a good judgment and knowledge, correctly provides an experiment, correctly exhibits a sense of an





	<p>experimental procedure, properly provides an assessment and presentation of results.</p> <p><u>A satisfactory performance (E)</u> – the student demonstrates a satisfactory judgment and knowledge, is poorly engaged and needs additional help to finish the experiment and final assessment of the experimental results correctly, present satisfactory presentation of results.</p> <p><u>A performance that does not meet the minimum academic criteria (F)</u> – the students is not engaged in experiment, did not exhibit sense of experimental procedures, poorly interprets and presents results.</p>
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Reports from realised laboratory projects

Evaluation	<p>Evaluation comprises judgment and knowledge related to the sense and methods of the laboratory project, engagement in realisation, quality of assessing and presenting the experimental results, use of reference materials.</p> <p>Grades for reports are awarded on a scale of A-F, where A is the best and F is a fail.</p> <p>An excellent report (A) – without any essential errors</p> <p>Fail (F) – no report</p>
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Final exam

Grades	<p>Grades are awarded on a scale of A-F, where A is the highest and F is a fail.</p> <p>Excellent (A) – the student presents a fluent knowledge of general histology and all of the histological and histochemical methods described.</p> <p>Good (C) – the student presents a good knowledge of general histology and all of the histological and histochemical methods described, makes rare but subtle errors.</p> <p>Satisfactory (E) – the student exhibits a satisfactory knowledge of general histology and all of the histological and histochemical methods described, but with a poor understanding of some aspects of histology, and makes subtle errors.</p> <p>Fail (F) – the student does not present a satisfactory knowledge of general histology and all of the histological and histochemical methods described, and makes many substantial errors, which disqualify their presentation.</p>
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