



Course: Histology with Embryology

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Department: Department for Histology and Embryology

Study program: University Integrated Undergraduate and Graduate Study of Dental Medicine (in English)

Study year: First

Academic year: 2026/2027

SYLLABUS

Course description (a brief description of the course, general instructions, where and in what form the lessons are organized, necessary equipment, instructions for attendance and preparation for classes, student obligations, etc.):

Histology with Embryology is a mandatory course during the first year of the Integrated Undergraduate and Graduate University Study of Dental Medicine in English. It consists of 40 hours of lectures, 40 hours of seminars, and 40 hours of practical laboratory classes, overall, 120 hours (8 ECTS). Lectures are held in the lecture halls of the Faculty of Medicine according to the course schedule. Seminars and practical laboratory classes are held at the Department of Histology and Embryology.

Course objectives

Histology is a fundamental field of medicine that focuses on the microscopic structure of the human body, including cells (cytology) and tissues, as well as the fine details of organs (microscopic anatomy). It plays a crucial role in providing a basic understanding of normal structures, which is essential for interpreting physiological functions and recognizing pathophysiological changes. Special emphasis is placed on the structure of the oral cavity and teeth. Closely related to histology, embryology explores the development of the embryo from the zygote to birth, with particular focus on morphogenesis during organ formation and the molecular basis of differentiation. Understanding these developmental processes is vital for clinicians, as it helps explain congenital malformations and developmental anomalies, especially those affecting the face and teeth. Together, histology and embryology offer significant practical value in clinical practice and the study of disease mechanisms at the microscopic level.

Expected course learning outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate a solid understanding of human histology and embryological development, with the ability to correlate microscopic structures with their physiological functions.
- Explain how cells are organized into tissues and how these tissues integrate to form functional organs.
- Apply microscopy skills to analyze and interpret histological slides of cells, tissues, and organs using light microscopy.
- Utilize foundational knowledge in biochemistry, biology, and anatomy to deepen their understanding of the normal microscopic architecture of the human body.



- Identify, describe, and distinguish between various tissue types and organs based on cellular composition and tissue arrangement.
- Outline and explain key developmental processes, including implantation, organogenesis, and the formation of the face and teeth, with attention to both normal and abnormal (congenital) patterns.

Course content:

The primary role of histology in the medical curriculum is to provide a basic understanding of the function of the human body based on its microscopic structure. Emphasis is placed on the normal structure as a basis for proper functioning and for understanding pathophysiological processes.

Histology part includes the following topics:

The basic tissues – organization and microscopic structure of cells and extracellular substance in the epithelial and connective tissues, muscle tissues and nervous tissue.

Organ system histology - circulatory system, immune system, endocrine glands, respiratory system, digestive tract and associated glands, urinary system, reproductive system, special senses.

Embryology part cover following topics:

Fertilization, cleavage, gastrulation and formation of primary germ layers; differentiation of primary germ layers and organogenesis; fetal membranes and placenta. Periods of intrauterine development, development of the face and oral cavity, development of the temporo mandibular joint, birth defects.

Part about the teeth:

Microscopic structure of enamel, dentin-pulp complex, cementum, periodontal ligament, bony socket, and gingiva. Early development of teeth (bud, cap, bell) formation and characteristics of ameloblasts, odontoblasts, cementoblast; the formation of mineralized parts of teeth, amelogenesis, dentinogenesis, cementogenesis, development of periradicular tissues and gingiva. Physiological tooth movements: eruption and shedding.

Assigned reading:

T.W.Sadler: Langman's Medical Embryology, XIV edition, Wolters Kluwer Health, Philadelphia, 2022.
A.L. Mescher.: Junqueira's Basic Histology, XVI edition, The McGraw –Hill Education, New York 2021.
Nanci A. Ten Cate's Oral Histology. IX edition, Elsevier, 2018.

Optional/additional reading:

<https://www.anatomicum.com/en/?articleid=58>
<http://microanatomy.net/digestive/tooth.htm>
<http://www.uky.edu/~brmacp/oralhist/html/ohtoc.htm>
<http://www.histologyguide.com/index.html>

COURSE TEACHING PLAN:

The list of lectures (with topics and descriptions):

1. Importance of histology

To understand the aim of the course. To recognize the role of Histology as a foundation for subsequent studies in pathology and physiology

2. Epithelial tissue

To define the microscopic structure and function of epithelial cells. To describe characteristic features of various types of epithelia

3. Connective tissue

To explain the types, characteristics, and functions of connective tissue. To describe and to define cells and ground substance (fibers and basic substances) of connective tissue proper, and connective tissues with special properties. .

4. Blood



To define the specifics of microscopic and sub-microscopic blood cells (erythrocytes, leukocytes, and platelets) and blood plasma. To adopt criteria for classification of blood cells based on their morphology.

5. Cartilage and joints

To explain the classification, characteristics, and functions of supporting connective tissue. To define the ECM of different types of cartilage tissue. To explain the growth and healing processes of cartilage tissue damage. To explain the histological characteristics of joints.

6. Bone

To explain the classification, characteristics, and functions of supporting connective tissue. To define the specifics of cells and bone matrix. To explain the characteristics of primary and secondary bone tissue with respect to their histological properties

7. Ossification

To explain the processes of intramembranous and endochondral ossification. To describe features of fracture bone remodeling and repair.

8. Nerve tissue

To explain the classification, characteristics, and functions of nerve cells (neurons and glial cells). To explain the processes of central and peripheral myelination. To define the cells and interstitial substances of certain parts of the central and peripheral nervous system (big and small brain, spinal cord, ganglia, peripheral nerves). To explain the ultrastructure of nerve cells, the ability to transmit signals and the structure of the synapse. To describe the histological structure of the meninges and the blood-brain barrier.

9. Muscle tissue

To explain the classification, characteristics, and functions of three types of muscle tissue. To define cellular and ECM properties of smooth, skeletal, and cardiac muscle. To explain the ultrastructure of muscle fibers and morphological conditions for the possibility of contraction.

10. Circulatory system

Be able to describe the histological structure of the walls of the heart, arteries, and veins, as well as the characteristics of their individual layers.

Understand the classification of blood capillaries based on their microscopic structure.

11. Endocrine system

To describe the classification, characteristics, and functions of the endocrine system. To define the specificity of the histological structure of certain endocrine glands, including the pituitary gland, epiphysis, thyroid, parathyroid glands and adrenal glands

12. Immune system

To explain the characteristics and functions of the immune system. To define the histological structure of the thymus, lymph nodes, spleen, and tonsils.

13. Urinary system

To explain the basic characteristics of the structure and function of the urinary system. To define the peculiarities of the kidney structure, especially the cortex, the ureter, the bladder, the male and female urethra. To describe parts of the nephron.

14. Male reproductive system

To define the specifics of the histological structure of testes, epididymis and accessory glands. To understand and explain the processes of gametogenesis and spermatogenesis.

15. Female reproductive system

To define and explain the histological features of the ovary, fallopian tube, uterus, and vagina during different stages of a woman's life. To learn, understand and know to explain the female reproductive cycles. Understand and explain the histological changes in the female reproductive organs during the reproductive (generative) period of a woman's life. To explain the functional stages of the female mammary glands.

16. Introduction to embryology, fertilization, 1st and 2nd week of development

To learn the purpose of embryology and the fundamental developmental processes (proliferation, migration, induction, differentiation, and programmed cell death).

Understand the difference between spermatogenesis and oogenesis.



Explain the key characteristics of fertilization and implantation, as well as the sequence of events during the first two weeks of intrauterine development.

17. 3rd week of development, Gastrulation, Neurulation, embryonic period

Learn the characteristics of changes occurring during the third week (gastrulation) and the fourth week of embryonic development (neurulation, somitogenesis, and the derivatives of the germ layers).

18. Fetal Period and Body Cavities

Understand the characteristics of the fetal stage of development. Learn the changes in shape and position of various body parts during fetal folding and the formation of the four major body cavities.

19. Fetal membranes

Acquire knowledge about the development and function of the embryonic membranes: trophoblast, amnion, chorion, and yolk sac.

Understand the development, structure, and function of the placenta, amniotic sac, and umbilical cord during different stages of pregnancy.

20.21. Development of the head

Explain the formation of the head and the development and differentiation of the pharyngeal (branchial) arches. Understand the relationships and interactions between the germ layers. Describe the development of the stomodeum and the migration of neural crest cells. Provide a detailed description of the development of the face, oral and nasal cavities, tongue, jaws, and the temporomandibular joint.

22. Birth defects

Describe the most common developmental anomalies, with an emphasis on facial and dental anomalies. List the most common teratogenic factors and explain their mechanisms of action. Understand and explain the potential causes of congenital anomalies and clinically significant disorders arising during development.

23. Respiratory system

To define histological characteristics of parts forming the respiratory system (respiratory and olfactory region of the nose, paranasal sinuses, lungs, bronchi, bronchioles, alveoli). To understand and explain the structure and function of the blood-air barrier.

24. Sensory organs: Skin

To describe the structure and function of thin and thick skin layers. To understand and explain the structure of the skin glands and sensory receptors. To describe the main features of hair and nails.

25. Sensory organs: Eye

To define the peculiarities of the histological structure of the individual structures of the eye. To understand and explain the texture and function of the lens, cilia muscle, and individual parts of the retina.

26. Sensory organs: Ear

To define the histological structure of various parts of the external, middle, and internal ear. To understand the function of individual parts of the internal ear.

27. Digestive system: Oral cavity

Describe the characteristics of the histological structure of various parts of the oral cavity (lips, cheeks, palate, tongue). Understand and explain the structure of the mucosa in different parts of the oral cavity. Explain the characteristics of the histological structure and the specific features in the structure of the temporomandibular joint.

28.29. Digestive system: Alimentary canal

To describe the specifics of the digestive tract. To understand the general structure of the digestive tract and its layers (epithelium, lamina propria, muscularis mucosa, submucosa, muscularis externa, Adventitia or serosa), esophagus, stomach, and intestine.

30. Digestive system: Associated organs

To describe the specifics of the organs associated with the digestive tract (Salivary glands, Pancreas, Liver, gallbladder). To understand the hepatic blood flow and structure of the liver lobules.

31.32. Development of the tooth

Provide an overview and an understanding of the early development of teeth. Clearly define the differences in origin of various cell types and the ectodermal-mesenchymal interactions during the formation of the tooth primordium. Explain the processes of proliferation and morphological shaping through the bud, cap,



and bell stages. Understand the processes of deposition of the organic matrix and mineral substances during the initial formation of dentin and enamel.

33.34. Dentin-pulp complex

Describe the morphological structure of the dental pulp and dentin and explain their interrelationship. Define the differences in chemical composition and physical properties between dentin and pulp and explain the resulting differences in their structure and function.

35. Enamel

Describe the morphological structure of enamel. Define and explain the physical and chemical characteristics as prerequisites for its adequate function.

36. Amelogenesis

Understand and define the processes of enamel development, formation of enamel prisms, and the method of mineralization. Understand the differentiation and further development of ameloblasts, as well as their numerous functions during crown formation.

37. Cementum and cementogenesis

Describe the structure of cementum, as well as the temporal-spatial differences between different types of cementum. Understand the purpose and importance of the proper arrangement of elements in these structures. Understand development of cementum.

38. Bony socket, PDL

Explain and understand the structure of the periodontal ligament, its function, and remodeling. Explain the connection between cementum and the periodontal ligament as well as the alveolar bone tissue. Describe the structure of the bone surrounding the tooth root and its specific features.

39. Development of the root

Describe and compare the development of dentin and cementum in the tooth root. Explain the formation of one or multiple roots in multirooted teeth. Understand the purpose and importance of the correct arrangement of elements in the tooth suspension apparatus. Relate the structure of the root to its function.

40. Eruption of the tooth

Describe and explain the mechanism of tooth eruption as well as the shedding of primary teeth and their replacement by permanent teeth. Understand the changes occurring under the influence of mechanical forces in various structures of the tooth suspension apparatus. Define the changes that occur over the years in individual dental tissues and understand the mechanisms of their development and potential for recovery.

The list of seminars with descriptions:

During seminars, students discuss in more detail the themes introduced during the lectures. Seminars allow students to be educated further on topics that were made insufficiently clear during lectures. The seminars also introduce the topics that will be addressed during practical laboratory classes. The theoretical knowledge of students is checked during the seminar, and students are therefore obliged to come prepared for this form of teaching.

1. Epithelial tissue

To classify and describe the microscopic and submicroscopic structure of epithelial cells. To define the specifics of certain types of glandular epithelia.

2. Connective tissue, Cartilage

To explain the characteristics and functions of connective tissue. To define cells and ECM (fibers and ground substance), connective tissue, and connective tissues with special properties. To define cellular and interstitial parts of different types of cartilage tissue. To explain the growth and healing processes of cartilage tissue damage.

3. Bone, Ossification

To define the specifics of cells and ECM of bone tissue. To explain the characteristics of primary and secondary bones with respect to their histological properties. To explain the processes of osteogenesis, the process of fracture healing, and bone remodeling.

4. Nervous tissue



To explain the classification, characteristics, and functions of nerve cells (neurons and glial cells). To explain the processes of central and peripheral myelination. To define the cells and interstitial substances of certain parts of the central and peripheral nervous system (big and small brain, spinal cord, ganglia, peripheral nerves). To explain the ultrastructure of the nerve cells, the ability to transmit the signal, and the structure of the synapse. To describe the histological structure of meninges and the blood-brain barrier.

5. Muscle tissue, Circulatory system

To clearly define cellular and interstitial properties of smooth, skeletal, and cardiac muscle tissue. To explain the ultrastructure of muscle cells and morphological conditions required for contraction in all types of muscle tissue. To describe the histological structure of the heart, artery, and vein. To adopt the classification of blood capillaries based on their microscopic structure

6. Endocrine system

To describe the classification, characteristics, and functions of the endocrine system. To define the specificity of the histological structure of certain endocrine glands; pituitary gland, epiphysis, thyroid, parathyroid glands and adrenal glands

7. Immune system

To explain the characteristics and general functions of the immune system. To define the histological structure of the thymus, lymph nodes, spleen, and tonsils

8. Urinary system

Describe and explain the specific features of the histological structure of the organs of the urinary system. Understand the structure of the nephron and clearly define the characteristics of the transitional epithelium.

9. Male reproductive system

Define the specific features of the histological structure of the testis, as well as the ducts and glands of the male reproductive system.

10. Female reproductive system

To understand and explain changes in histological structure in the ovaries and uterus that precede the emergence of mature sex cells.

11. Embryology: Development of the embryo

Explain fertilization and the sequence of events during the first (zygote, cleavage) and second week (implantation, bilaminar embryonic disc) of intrauterine development. Explain the specific features of changes during the third week (gastrulation) and the fourth week of embryonic development (neurulation, somitogenesis, derivatives of germ layers), and describe the changes during the embryonic and fetal period of development.

12. Embryology: Fetal membranes and placenta

Acquire knowledge about the origin and function of the embryonic membranes – amnion, chorion, allantois, yolk sac, and amniotic cavity – as well as the placenta. Understand the utero-placental circulation.

13. Respiratory system

To define the basics of development and the specifics of the histological structure of the individual parts of the respiratory system (respiratory and nerve region, nose, paranasal sinuses, lungs, bronchi, bronchioles, alveoli). To understand and explain the structure and function of the blood-air barrier.

14. Skin, Ear

Define the specific features of the histological structure of thin and thick skin, and become familiar with the structure of hair and nails.

Describe the structure of the external, middle, and inner ear.

15. Eye



To define the specifics of the histological structure of the individual structures of the eye. To understand and explain the texture and function of the lens, cilia muscle, and individual parts of the retina

16. Digestive system: Oral cavity

Describe and explain the specific features of the histological structure of various parts of the oral cavity. Describe the development of the oral cavity and neighboring structures.

17. Development of the tooth

Explain the development of primary and permanent teeth. Explain the processes of tooth formation in primary and secondary dentition. Explain the formation of the epithelial lamina and the stages of development of the enamel organ.

18. Digestive system: Alimentary canal

Define the specific histological features of different parts of the digestive tract (esophagus, stomach, small and large intestine).

Understand and explain the structure and function of the individual layers in various segments of the digestive tract.

19. Digestive system: Associated organs

Describe and explain the histological structure of the major salivary glands, pancreas, and liver. Understand and explain the blood and bile flow within the liver.

20. Tissues of the tooth

Describe the chemical and physical properties of dental tissues that determine their histological structure and morphological characteristics. Relate and explain the structural characteristics of different parts of the tooth with their function, and explain the changes that occur with aging

21. Tooth and associated structures

Explain the relationships between different dental tissues, which change depending on the condition and function of the tooth (cementum, periodontal ligament). Relate and explain the structural characteristics of different parts of the tooth with their function, and explain the changes associated with aging (gingiva). Understand and explain the structure and development of the temporomandibular joint.

22. Characteristics of epithelial tissues

Define the microscopic and submicroscopic structural features of epithelial cells. Explain the characteristics of different types of covering (surface) and glandular epithelium.

23. Characteristics of connective tissues

Define the characteristics of the cells and extracellular matrix (fibers and ground substance) of connective tissue in the narrow sense, as well as specialized types of connective tissue.

24. Cyclic changes in female reproductive organs

Become familiar with and acquire knowledge about the ovarian and uterine cycles. Understand and explain the changes in the female reproductive organs during a woman's reproductive age

25. Dentinogenesis

Explain the mechanism of dentin formation. Describe the development of odontoblasts and their function during crown and root formation. Understand and compare the characteristics of enamel and dentin development, the processes of mineralization, and the formation of characteristic structures (e.g., prisms in enamel, tubules in dentin, etc.).

26. Repetitipon and Consultations



The list of practicals with descriptions:

LPs are preceded by lectures and seminars on this topic. The practical part of the LPs involves an overview of histological images of tissues and organs using microscopes and atlases mentioned in the literature list. To demonstrate their understanding of the images, students will draw the observed structures and discuss them with the teacher and demonstrator. The student is expected to be able to recognize the structures of various tissues and organs in microphotographs, and to relate the observed details to the function of these tissues or organs. Students should be able to extract the important characteristics of an unknown microscopic slide, which will enable them to identify an organ or tissue based on comparison with known structures.

Students must have the appropriate drawing equipment (wooden pencils of multiple colors), a notebook (without lines), and white coats. Digital tools for drawing (e.g., tablet computers or similar devices) are not allowed.

Their participation in classes, understanding of the preparations, and their ability to recognize microscopic structures are evaluated in each LP. Thus, the student prepares to pass the Tissue Recognition Test at the end of the course, in which the same materials will be used. A student may miss up to 30% of exercises, but all absences must be made up. Make-up sessions (up to 30%) are organized during the last week of classes. They involve viewing and sketching slides and a theoretical evaluation, which is also confirmed with a signature from the instructor. If a student misses 30% or more of exercises, they lose the right to make up missed sessions and cannot take the final exam.

Drinking and eating during LP is highly forbidden.

1. Epithelial tissue (dental pulp, kidney, small intestine, esophagus, skin – HE)
2. Connective tissue, Cartilage (blood smear, skin – vital staining, tendon, cartilage – hyaline, elastic, and fibrous)
3. Bone, Osteogenesis (decalcified bone, bone ground section, intramembranous and endochondral ossification)
4. Nervous tissue and system (pinal cord – HE, silver stain, spinal ganglia, autonomic ganglia, cerebellum – HE, nerve)
5. Muscle tissue, Vascular system (smooth, skeletal, cardiac muscle, endocardium, artery, vein – HE)
6. Endocrine system (smooth, skeletal, cardiac muscle, endocardium, artery, vein – HE)
7. Immune system (bone marrow, tonsil, thymus, spleen, lymph node)
8. Urinary system (kidney, urinary bladder, ureter)
9. Male reproductive system (testis and epididymis, prostate, spermatic cord)
10. Female reproductive system (kidney, urinary bladder, testis and epididymis, prostate)
11. Embryology I (embryo)
12. Embryology II (umbilical cord, placenta – chorionic villi)
13. Respiratory system (nose, trachea, lungs)
14. Skin, Ear (axillary skin, plantar skin, external and internal ear)
15. Eye (anterior and posterior segments)
16. Digestive system I: Oral cavity (lip, tongue, vallate papilla)
17. Tooth development (enamel organ: bud, cap, bell stages)
18. Digestive system II: Alimentary canal (esophagus, stomach, small and large intestine, appendix)
19. Digestive system III: Associated organs (salivary glands – parotid, submandibular; pancreas, liver)
20. Tooth structure I (Mineralized dental tissues; tooth ground section – enamel, dentin, cementum)



21. Tooth structure II (Overview of tooth structure and associated tissues; decalcified tooth – dental pulp, dentin, cementum, periodontal ligament, alveolar bone, gingiva)
22. Slide repetition
23. Slide recognition

Students' obligations:

Students are expected to be prepared theoretically for seminars and practical laboratory classes in accordance with the executive education plan, which will be continuously monitored. This course encourages discussion, individualized study, and collaborative work in small groups.

Class attendance is mandatory. Students may be absent from 20% of each form of class, provided they have a justifiable cause. If a student is absent for more than 20% classes, they will have to re-enroll in the course. Absence from practicals must be compensated at the end of the course. Absence of more than 20% in one form of class (i.e. lectures, seminars or laboratory practice) cannot be compensated by higher attendance at another form.

Students are expected to actively participate in all aspects of the course, complete reports from practical laboratory classes (LP) on time, and attend the examinations. During the LPs, a student is obligated to have tools (a notebook, colored pencils, a white coat). Lectures, seminars, and practical classes begin precisely at the scheduled time, and any lateness by students will be considered an absence. Students must attend all forms of classes and assessments dressed appropriately. **The use of mobile phones, as well as the consumption of food and drinks, is not permitted during classes and examinations.**

Assessments (exam, description of written/oral/practical exam, the scoring criteria:

Grading of students' work will be conducted according to the current Ordinance on Studies of the University of Rijeka.

Assessment of student work

Student work will be assessed and graded during the course and on the final exam. During the course, students may obtain a total of 100 grade points (credits). Students can achieve up to 70% of the final grade during the classes, and a maximum of 30% of the final grade at the final exam. Evaluation of students' progress during classes, midterms, and the final exam in the academic year 2025/2026 is shown in Table 1.

Table 1. Distribution of grade points in the course "Histology and Embryology"

	Evaluation	Max. grade points
Midterm exams	Midterm exam	23
	Midterm exam	23
	Total	
Seminars/laboratory practicals	Active participation	6
	Accepted notebook	3
Tissue section recognition		15
	Total	70
Oral exam		30
Total		100



Midterm exams

During the course, two written midterm exams are planned. Written midterm exams consist of 60 multiple-choice questions and will be evaluated according to the criteria shown in Table 2.

MT I – 10.5.2027.

MT II – 31.05.2027.

Table 2. Evaluation of written midterm exams I-III

Number of correct answers	Grade points
0-29	0
30-32	8
33-35	10
36-38	12
39-41	14
42-44	16
45-47	18
48-50	19
51-53	20
54-55	21
56-57	22
58-60	23

Students can retake the midterm exam once, in the case of absence or because they are not satisfied with the obtained grade points. Then, **the points gained from the retaken midterms will be considered.**

Students will have the opportunity to correct one or more midterm exams only once. Correction of the midterm exams I-II will be held at the end of the course (04.06.2027.), before final exams.

Seminars and practical laboratory classes (LPs): For active participation and demonstrated knowledge in seminars/LPs (at least 50% of seminars/LPs), students can earn a maximum of 7 points. They can receive 0–2 points per seminar/LP, and the final score will be calculated according to Table 3. For keeping a well-organized notebook with drawn and described histological specimens, the student may receive an additional 1–3 points.

Table 3:

Received points	Grade points
10-16	2
17-23	3
24-29	4
30-36	5
37-40	6



Recognition of Slides (ROS) exam: Is a mandatory oral exam and is required for students to be qualified for the final exam. Before going to this colloquium, the student must have completed all the LPs. If he/she was absent from one or more LPs, these need to be done in the time provided for making up the exercises. A student must identify at least 8 of the 10 microscopic slides, as well as the structures that are described and discussed during classes. For this ROS-examination a student can receive a maximum of 15 points. At least 8 points are required to pass the exam. Each slide is evaluated with $\frac{1}{2}$, 1, or $1\frac{1}{2}$ points depending on the student's knowledge. Recognition of the slides awards $\frac{1}{2}$ point and answering additional questions adds up to 1 point for each slide. This ROS exam will be held before each final exam.

Final exam

The final exam in Histology and Embryology is oral and is held at the faculty according to a fixed schedule, which is published one day before the exam based on applications submitted through the ISVU system.

The maximum number of points that can be earned on the oral exam is 30.

Students who earn fewer than 35 points during the course must re-enroll in the Histology and Embryology course in the next academic year.

Eligibility for the Final Exam

A student may take the final exam if they have: Earned at least 35 points during the course, and passed the ROS exam.

Ineligibility for the Final Exam

Students cannot take the final exam if: They have earned 0 to 34.99 points during the course, or they have 20% or more absences in any form of instruction (lectures, seminars, or practicals). Such a student is considered unsuccessful (grade: 1 – F) and must re-enroll in the course in the next academic year.

A student who is re-enrolling in the course and meets the requirements for taking the exam may submit a written request to be exempted from attending classes again and may take the exam using the points earned in the previous academic year.

All other students are required to repeat all forms of instruction.

The final grade represents a sum of all grade points obtained during the course and on the final exam according to the following criteria:

90-100 points	A	5
75 – 89 points	B	4
60 – 74 points	C	3
50 – 59 points	D	2
0 – 49 points	F	1



Final exam dates

07.06.2027.

8.07.2027.

16.7.2027.

01.09.2027.

24.09.2027.

Other important information regarding to the course:

It is expected that all students follow the Code of Academic Honesty in accordance with the Code of Ethics for the students of the University of Rijeka

(<https://uniri.hr/wp-content/uploads/2019/05/Etic48dki20kodeks20za20studente20i20studentice.pdf>) .

For questions and concerns, please feel free to contact us by e-mail or via Merlin.

COURSE SCHEDULE (for the academic year 2026/2027)

Date	Lectures (time and place)	Seminars (time and place)	Practicals (time and place)	Instructor
12.4.2027.	L1, L2 (9,15-11,00) Dept.of histology			Jelenčić
		S1LP1 (12:00-14:15) Dept. of histology		Mladenčić
13.4.2027.	L3, L4 (10:15-12:00) Lecture room P4			Polić
		S22 (12,15-13,00) Lecture room P4		Polić
	L5 (13:15-14:00) Lecture room P4			Krmpotić
14.4.2027.				
		S2LP2(12:15-15:30) Dept. of Histology		Mladenčić
15.4.2027.	L6, L7 (11:15-13:00) Lecture room P7			Krmpotić
	L8 (13:15-14:00) Lecture room P7			Jelenčić
16.4.2027.		S3 LP3 (8,30-11,30) Dept. of Histology		Lenartić
		S4LP4 (12:00-14:15) Dept. of histology		Šestan
19.4.2027.	L9, L10 (8:30-10:15)			Wensveen



	Lecture room P6			
20.4.2027.	L11, L12 (14:15-16:00) Lecture room P5			Krmpotić
21.4.2027.		S5LP5 (12:30-15:45) Dept. of histology		Mladenić
22.4.2027.	L13 (12:15-13:00) L14 (13:15-14:00) Lecture room P7			Wensveen(L13) Lenartić (L14)
		S6LP6 (14:15-15:45) Dept. of histology		Kavazović
23.4.2027.		S7LP7(8:30-11:30) Dept. of histology		Mladenić
		S8LP8 (12:00-14:30) Dept. of histology		Lenartić
26.4.2027.		S9LP9 (8:30-11:00) Dept. of histology		Lenartić
27.4.2027.	L15 (12:15-13:00) Lecture room P9	S23 (13:15-14:00) Lecture room P9		Šestan
				Jelenčić
28.4.2027.	L16 (11:15-12:00) Lecture room P7			Šestan
		S10LP10 (12:15-15:30) Dept. of histology		Babić Čač
29.4.2027.	L17 (12:15-13:00) L18(13:15-14:00) Lecture room P7			
30.4.2027.		S11LP11(8:30-11:45) Dept. of histology		Kavazović
	L19 (13:30-14:15) Lecture room P7			Wensveen
3.5	L20, L21 (8:30-10:15) Lecture room P6			Babić Čač
	L22 (10:30-11:15) Lecture room P6			Krmpotić
4.5	L23 (11:15-12:00) Lecture room P9			Lenartić
	L24 (12:15-13:00) Lecture room P9			Lenartić
5.5		S12LP12 (12:15-14:45) Dept. of histology		Jelenčić
6.5	L25 (13:00-13:45) Lecture room P7			Jelenčić
	L26 (14:00-14:45)			Babić Čač



	Lecture room P7			
7.5		S13LP13 (8:30-11:00)		Kavazović
		Dept. of histology		
10.5		MTE I (13:00-14:30) Lecture room P6		
	L27 (15:00-15:45) Lecture room P6			Kavazović
11.5	L28, L29(11:00-12:30) Lecture room P7			Wensveen
	L30 (12:45-13:30) Lecture room P7			Krmpotić
12.5	L31, L32 (10:15-12:00) Lecture room P7			Jelenčić
		S14LP14 (12:15-15:30) Dept.of histology		Kavazović
13.5.	L33, L34 (10:15-12:00) Lecture room P4			Babić Čač
		S24 (12:15-13:00) Lecture room P4		Babić Čač
14.5.		S15LP15 (10:00-13:00) Dept. of histology		Kavazović
17.5	L35 (8:30-9:15) Lecture room P6 L36 (9:30-10:15) Lecture room P6			Jelenčić
18.5		S16LP16 (14:15-16:00) Dept.of histology		Krmpotić
19.5	L37 (10:15-11) Lecture room P5			Jelenčić
	L38 (11:15-12) Lecture room P5	S17LP17 (12:15-15:30) Dept.of histology		Lenartić (L38) Kavazović (S16LP16)
20.5	L39 (9:15-10:00) Lecture room P5			Wensveen
	L40 (10:15-11:00) Lecture room P5			Jelenčić
21.5		S18LP18(8:30-11:30) Dept. of Histology		Kavazović
		S19LP19 (12:30-14:15) Dept. of histology		Wensveen
24.5		S20LP20(8:30-11:45) Dept. of histology		Babić Čač
		S21LP21 (10:30-13:45) Dept. of histology		Jelenčić
25.5.				
26.5.		S26LP22 (12:30-14:15) Dept. of histology		Kavazović



27.5.		non-working day	
28.5.			
31.5.		MT II (12:00-13:30) Lecture room P8	Jelenčić
1.6		LP23 (8:30-10:00) Dept. of histology	
2.6			
3.6			
4.6			
7.6.		Final exam	

List of lectures, seminars and practicals:

	LECTURES (Topics)	Teaching hours	Location/Lecture room
L1	Importance of Histology	1	Dept.of histology
L2	Epithelial tissue	1	Dept.of histology
L3	Connective tissue	1	P4
L4	Blood	1	P4
L5	Cartilage, Joints	1	P4
L6	Bone	1	P7
L7	Osteogenesis	1	P7
L8	Nerve tissue	1	P7
L9	Muscle tissue	1	P6
L10	Circulatory system	1	P6
L11	Endocrine system	1	P5
L12	Immune system	1	P5
L13	Urinary system	1	P7
L14	Male reproductive system	1	P7
L15	Female reproductive system	1	P9
L16	Embryology: Intro, Fertilization, 1 st and 2 nd week	1	P7
L17	Embryology: 3 rd week of development, Gastrulation, Neurulation, embryonic period	1	P7
L18	Fetal period and body cavities	1	P7
L19	Embryology: Fetal membranes	1	P7
L20	Development of the head	1	P6
L21	Development of the head	1	P6



L22	Birth defects	1	P6
L23	Respiratory system	1	P9
L24	Sensory organs: Skin	1	P9
L25	Sensory organs: Eye	1	P7
L26	Sensory organs: Ear	1	P7
L27	Digestive system: Oral cavity	1	P6
L28	Digestive system: Alimentary canal	1	P7
L29	Digestive system: Alimentary canal	1	P7
L30	Digestive system: Associated organs	1	P7
L31	Development of the tooth	1	P7
L32	Development of the tooth	1	P7
L33	Dentin-Pulp Complex	1	P4
L34	Dentin-Pulp Complex	1	P4
L35	Enamel	1	P6
L36	Amelogenesis	1	P15
L37	Cement, Cementogenesis	1	P5
L38	Bony socket, Periodontal ligament	1	P5
L39	Development of the root	1	P5
L40	Eruption of the tooth, Gingiva	1	P5
TOTAL TEACHING HOURS		40	

	SEMINARS (Topics)	Teaching hours	Location/Lecture room
S1	Epithelial tissue	1	Dept.of histology
S2	Connective tissue, Cartilage	2	Dept.of histology
S3	Bone, Osification	2	Dept.of histology
S4	Nerve tissue	1	Dept.of histology
S5	Muscle tissue, Circulatory system	2	Dept.of histology
S6	Endocrine system	1	Dept.of histology
S7	Immune system	1	Dept.of histology
S8	Urinary system	2	Dept.of histology
S9	Male reproductive system	2	Dept.of histology
S10	Female reproductive system	2	Dept.of histology
S11	Embryology I: Development of the embryo	3	Dept.of histology
S12	Embryology II: Fetal membranes and placenta	2	Dept.of histology
S13	Respiratory system	1	Dept.of histology
S14	Skin, Ear	2	Dept.of histology
S15	Eye	2	Dept.of histology
S16	Digestive system I: Oral cavity	1	Dept.of histology
S17	Tooth development	2	Dept.of histology



S18	Digestive system II: Alimentary canal	2	Dept.of histology
S19	Digestive system III: Associated organs	1	Dept.of histology
S20	Tissues of the tooth	2	Dept.of histology
S21	Tooth and associated structures	2	Dept.of histology
S22	Characteristics of connective tissues	1	P4
S23	Cyclic changes of the female reproductive organs	1	P9
S24	Dentinogenesis	1	P4
S25	Repetition and consultation	1	Dept.of histology
	TOTAL TEACHING HOURS	40	

	PRACTICALS (Topics)	Teaching hours	Location/Lecture room
1	Epithelial tissue	2	Dept.of histology
2	Connective tissue, Cartilage	2	Dept.of histology
3	Bone, Osification	2	Dept.of histology
4	Nerve tissue	2	Dept.of histology
5	Muscle tissue, Circulatory system	2	Dept.of histology
6	Endocrine system	1	Dept.of histology
7	Immune system	2	Dept.of histology
8	Urinary system	1	Dept.of histology
9	Male reproductive system	1	Dept.of histology
10	Female reproductive system	2	Dept.of histology
11	Embryology I: Development of the embryo	1	Dept.of histology
12	Embryology II: Fetal membranes and placenta	2	Dept.of histology
13	Respiratory system	2	Dept.of histology
14	Skin, Ear	2	Dept.of histology
15	Eye	2	Dept.of histology
16	Digestive system I: Oral cavity	1	Dept.of histology
17	Tooth development	2	Dept.of histology
18	Digestive system II: Alimentary canal	2	Dept.of histology
19	Digestive system III: Associated organs	1	Dept.of histology
20	Tissues of the tooth	2	Dept.of histology
21	Tooth and associated structures	2	Dept.of histology
22	Slide repetition	2	Dept.of histology
23	Slide recognition	2	Dept.of histology



	FINAL EXAM DATES
1.	7.6.2027.
2.	8.7.2027.
3.	16.7.2027.
4.	1.9.2027.
5.	24.9.2027.

	Lectures	Seminars	Practicals	Total
Total number	40	40	40	120
On-line	0	0	0	0
Percentage	0	0	0	0