

# TISSUE BIOLOGY

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|------|---|--|--|
| 1    | Course Title:   | TISSUE BIOLOGY   |  |
| 2    | Course Code:  | BYL0531  |  |
| 3    | Type of Course:   | Optional   |  |
| 4    | Level of Course:  | First Cycle  |  |
| 5    | Year of Study:  | 4  |  |
| 6    | Semester:   | 8  |  |
| 7    | ECTS Credits Allocated:                                 | 5.00   |  |
| 8    | Theoretical (hour/week):                                | 3.00   |  |
| 9    | Practice (hour/week):                                   | 0.00   |  |
| 10   | Laboratory (hour/week):                                 | 0  |  |
| 11   | Prerequisites:  | None   |  |
| 12   | Language:   | Turkish  |  |
| 13   | Mode of Delivery:                                       | Face to face   |  |
| 14   | Course Coordinator:                                     | Dr. Öğr. Üyesi MURAT SEVİNÇ  |  |
| 15   | Course Lecturers:                                       | Yok  |  |
| 16   | Contact information of the Course Coordinator:          | Uludağ Üniversitesi<br>Fen-Edebiyat Fakültesi<br>Biyoloji Bölümü<br>16059 Görükle Kampüsü, Nilüfer / BURSA<br>0 224 2941753<br>smurat@uludag.edu.tr  |  |
| 17   | Website:  |  |  |
| 18   | Objective of the Course:                                | Teaching types, structures and functions of the epithelial, connective, cartilage, bone, blood, muscle and nerve tissues seen in vertebrate animals. |  |
| 19   | Contribution of the Course to Professional Development: |  |  |
| 20   | Learning Outcomes:                                      |  |  |
|      |   | 1  | Knows the description of tissue biology and its methods of study, preparation techniques and types of microscopes. |
|      |   | 2  | Knows the epithelial tissue structure, types, and their functions.   |
|      |   | 3  | Knows the connective tissue structure, types, fibers, cells and their functions.                                   |
|      |   | 4  | Knows the cartilage tissue structure, types, cells, their functions and histogenesis.                              |
|      |   | 5  | Knows the bone tissue structure, types, cells, their functions and histogenesis.                                   |
|      |   | 6  | Knows the blood tissue structure, cell types and their functions with the plasma, lymph and hematopoiesis.         |
|      |   | 7  | Knows the muscle tissue structure, types, cells, their functions and mechanisms of contraction.                    |
|      |   | 8  | Knows the neurons structure and their functions, types of glial cells, structure and functions.                    |
|      |   | 9  |  |
|      |   | 10   |  |
| 21   | Course Content:   |  |  |
|      |   | <b>Course Content:</b>   |  |
| Week | Theoretical   | Practice   |  |

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| 1  | Sinir doku ve gelişmesi. Sinir hücrelerinin yapısı. Sinapslar ve nöral iletişim. Glia hücreleri ve çeşitleri   |  |
| 2  | Tissue types. The forms and properties of epithelial cells. Cell junctions. Specializations of the cell surface. Covering epithelia and types.           |  |
| 3  | Glandular epithelia and types. Serous, mucous and sero-mucous cells. Diffuse neuroendocrine system, myoepithelial cells and steroid secreting cells.     |  |
| 4  | Connective tissue and cells. Connective tissue ground substance.   |  |
| 5  | Fibers of connective tissue. Collagen, elastic and reticular fibers. Collagen synthesis.   |  |
| 6  | Types of connective tissue. Loose and tight connective tissue, elastic, reticular, adipose and mucous tissue.  |  |
| 7  | Structure of cartilage tissue. The cells and development of the cartilage. Hyaline, elastic and fibrous cartilage.                                       |  |
| 8  | Bone, types of bone cells and bone matrix. Endosteum and periosteum. Types of bone. Primary and secondary bone tissue.                                   |  |
| 9  | Histogenesis of bone. Endochondral and intramembranous ossification. Mechanisms of calcification. Bone growth and remodeling. Joints.                    |  |
| 10 | Structure, functions and composition of blood and plasma. Blood cell (red blood cells, white blood cells and platelets) types, structures and functions. |  |
| 11 | Hematopoiesis. Stem cells. Bone marrow. Mechanisms of clotting.  |  |
| 12 | General structure of the muscle tissue and the cells. Skeletal muscle and fibers and their organization. Mechanism of contraction.                       |  |
| 13 | Structure of cardiac and smooth muscles. Regeneration of muscle tissue.  |  |
| 14 | Nerve tissue and its development. Structures of neurons. Synapsis and neural transmission. Glial cells and its types.                                    |  |

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| 22 | Textbooks, References and/or Other Materials: | Lecturer's course notes. |
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| 23 | Assesment |  |
|----|-----------|--|

| TERM LEARNING ACTIVITIES   | NUMBER | WEIGHT |
|--|--------|--------|
| Midterm Exam   | 1      | 40.00  |
| Quiz   | 0      | 0.00   |
| Home work-project  | 0      | 0.00   |
| Final Exam   | 1      | 60.00  |
| Total  | 2      | 100.00 |
| Contribution of Term (Year) Learning Activities to Success Grade |        | 40.00  |
| Contribution of Final Exam to Success Grade                      |        | 60.00  |
| Total  |        | 100.00 |
| Measurement and Evaluation Techniques Used in the Course         |        |        |

**24 ECTS / WORK LOAD TABLE**

| Activites                  | Number | Duration (hour) | Total Work Load (hour) |
|----------------------------|--------|-----------------|------------------------|
| Theoretical                | 14     | 3.00            | 42.00                  |
| Practicals/Labs            | 0      | 0.00            | 0.00                   |
| Self study and preperation | 14     | 4.00            | 56.00                  |
| Homeworks                  | 0      | 0.00            | 0.00                   |
| Projects                   | 0      | 0.00            | 0.00                   |
| Field Studies              | 0      | 0.00            | 0.00                   |
| Midterm exams              | 1      | 26.00           | 26.00                  |
| Others                     | 0      | 0.00            | 0.00                   |
| Final Exams                | 1      | 26.00           | 26.00                  |
| Total Work Load            |        |                 | 150.00                 |
| Total work load/ 30 hr     |        |                 | 5.00                   |
| ECTS Credit of the Course  |        |                 | 5.00                   |

| 25  | CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS |     |              |     |     |                 |     |     |               |      |      |                    |      |      |      |      |
|---|---|-----|--------------|-----|-----|-----------------|-----|-----|---------------|------|------|--------------------|------|------|------|------|
|   | PQ1   | PQ2 | PQ3          | PQ4 | PQ5 | PQ6             | PQ7 | PQ8 | PQ9           | PQ10 | PQ11 | PQ12               | PQ13 | PQ14 | PQ15 | PQ16 |
| ÖK1   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK2   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK3   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK4   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK5   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK6   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK7   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| ÖK8   | 0   | 0   | 0            | 0   | 0   | 1               | 0   | 0   | 0             | 0    | 0    | 0                  | 0    | 0    | 0    | 0    |
| <b>LO: Learning Objectives PQ: Program Qualifications</b> |   |     |              |     |     |                 |     |     |               |      |      |                    |      |      |      |      |
| <b>Contribution Level:</b>                                | <b>1 very low</b>   |     | <b>2 low</b> |     |     | <b>3 Medium</b> |     |     | <b>4 High</b> |      |      | <b>5 Very High</b> |      |      |      |      |