

|  | Board Code and Name | Term of the Board | Course Hours of the Board (Theoretical / Application) | ECTS of the Board | Language of the Board | Type of Board |
|---|---|------------------------------|---|-------------------|-----------------------|---------------|
| | TIP 102 - Cell and Tissue Systems | 1st Semester / Fall Semester | 108/50 | 9 | Turkish | Imperative |
| Responsible for the Board (s) | Prof. Dr. Zafer ÇETİN, Chair of the Course Board Assoc. Prof. Dr. Tuba DENKÇEKEN, Vice President of the Course Board Assist. Prof. Meltem GÜNGÖR, Vice President of the Course Board | | | | | |
| Board's Learning and Teaching Techniques | <ol style="list-style-type: none"> 1. Theoretical Lecture 2. Practice/ Exercise 3. Assignments/ Research 4. Q&A 5. Argument 6. Observation 7. Team/Group Work | | | | | |
| Board Measurement Techniques | <ol style="list-style-type: none"> 1. Written Exam 2. Practice Exam 3. Formative Assessment | | | | | |
| Purpose of the Board | At the end of the TIP102 Course Board, students; normal structure, development and functions of cells and tissues that make up the body, cell proliferation, DNA damage and repair mechanisms, cancer genetics and stem cell biology, effects of radiation on cells and tissues, metabolic properties of water, proteins, carbohydrates and lipids that make up the body structure, basic laboratory findings and diagnostic methods related to them, anatomical features of the bones that make up the skeleton, their health status, climate changes and health, It is aimed to gain general knowledge and skills on social/global inequality and health indicators, definition of priority/disadvantaged groups. | | | | | |
| Learning Objectives of the Board | <p>Knowledge</p> <ol style="list-style-type: none"> 1. Recognize and distinguish cell and tissue systems. 2. Explain their embryological origin and development. 3. Explain the structure and functions of cell organelles. 4. Explains oxidative stress, radiation effect, DNA damage and repair mechanisms. 5. Explain the mechanisms of cell death. 6. Describe the chemical structures of biomolecules and explain their metabolism. 7. It counts the bones that make up the skeleton and the anatomical formations they have. 8. Describes the effect of radiation on cells and tissues and the principles of radiation protection. 9. Explain the concepts of health states and health promotion. 10. Explain the effects of climate change and globalization on health. 11. Explain the concepts of inequality in health, health indicators, community and family health. 12. Defines the characteristics of priority/disadvantaged groups. Skill <p>Skill</p> <ol style="list-style-type: none"> 1. Counts the principles of using a microscope and uses the microscope. 2. Performs microscopic examination of cells and tissues. 3. Recognize and distinguish the normal structure of tissues, cells and organelles. 4. Recognizes and distinguishes the bones that make up the skeleton and the anatomical formations they have. 5. Makes graphic drawings, interprets the change of radiation, uses a radiation detector. 6. Prepares solution and buffer. 7. Experimentally distinguish between carbohydrates and proteins. 8. Distinguish the chemical reactions of building blocks. <p>Economy</p> <ol style="list-style-type: none"> 1. Exhibits the motivation to learn system-related knowledge and skills. 2. Exhibits responsible physician attitudes and behaviors towards theoretical courses and practices. 3. Adopts the importance of evidence-based scientific approach. | | | | | |

| | |
|------------------------------------|--|
| <p>Content of the Board</p> | <p>At the beginning of this course board, general information is given about methods such as microscopic examination, cell cultures, histochemistry and immunohistochemistry, which are technical methods related to examining cells and tissues in Medical Biology and General Histology courses. Cytoskeleton, structure and functions of cells and organelles, cell division, intercellular communication mechanisms, oxidative stress, DNA damage and repair mechanisms, cell differentiation and apoptosis, cancer biochemistry, stem cell biology, biological and histological properties of tissues are discussed. In biophysics courses; Information about biomolecules, thermodynamic principles, radiation biophysics, radioactivity, the effect of radiation on cells and tissues and the principles of protection are presented. After the histological examination of cartilage and bone tissues, theoretical and practical information about bones is given in Anatomy courses. In Medical Biochemistry courses; Chemical structures, functions, metabolisms and related biochemical diagnostic methods of molecules in biological systems are taught. Information about the types of molecules that make up the genetic material, the biosynthesis of the genetic material, its metabolism, the diseases caused by disorders in its metabolism, the explanation of the organization in the nucleus, body fluids, the concept of pH and buffer systems are presented. In Behavioral, Social and Human Sciences (DSBB) courses; social/global inequality and health indicators, climate changes, globalization and health, inequality in health, health issues in priority/disadvantaged groups, as well as health conditions such as physical, mental activity and exercise, oral and dental health and travel health are covered.</p> |
| <p>Resources</p> | <ol style="list-style-type: none"> 1. Molecular Genetics. Prof. Dr. Güler Temizkan. Nobel Medical Bookstores. 2013. 2. Cell Molecular Approach. Neşe ATABEY, Ersan KALAY, Meral SAKIZLI. Nobel Bookstore. 2016. 3. Lehninger Principles of Biochemistry. David L. Nelson, Michael M. Cox. Translation Editor; Y. Murat Elçin. Translation from the Fifth Edition. Palme Bookstore. 2016. 4. Junqueira's Atlas of Basic Histology. Unthdny L. Mescher. Translation Editor; Prof. Dr. Seyhun SOLAKOĞLU. Dr. Aslı ERDOĞAN. Dr. Hasan Serdar MUTLU. Sun Medical Bookstore. 2018. 5. Moore Human Embryology in Clinical Aspects. Translation Editor; Prof. Dr. Hakkı Dalçık. Nobel Medical Bookstore. 2016. 6. Difiore's Atlas of Histology, Victor P. Eroschenko, Translation Editor, Ramazan Demir. Nobel Bookstore. 2007. 7. Ferit Pehlivan. Biophysics. Pelikan Publishing. 2019. 8. Gurbuz Celebi. For Biophysical Medicine and Dentistry Students. Peace Publications Faculties Bookstore. 2011. 9. Biophysics for Medicine and Dentistry Students – II- Communication and Information Processing in Living Things 10. Ismail Gunay. Basic Biophysics Volume 1: Biomechanics. Çukurova Nobel Medical Bookstore. 2014. 11. Gray's Anatomy The Anatomical Basis of Clinical Practice- Editor-in-Chief: Susan Standing, 41. Edition-Elsevier. 2015. 12. Arıncı - Anatomy 1-2. Prof. Dr. Kaplan ARINCI, Prof. Dr. Alaittin ELHAN. Seventh Edition. Sun Medical bookstores. 2020. 13. Atlas of Sobotta Anatomy. Urban & Fischer F. Paulsen, J. Waschke. Translation Editor; Prof. Dr. S. Tuna Karahan. Sun Medical bookstores. 2019. 14. Netter Atlas of Human Anatomy 7. Oppression. Frank H Netter. Prof. Dr. Meserret CUMHUR. Sun Medical Bookstores. 2020. |

| Weeks | Board Courses (Theoretical/Practical) |
|---|---|
| 1st Week | Biochemistry (T/U), General Histology (T), Biophysics (T), Medical Biology (U). |
| 2nd Week | General Histology (T/U), Medical Biology (T/U), Biophysics (T/U), Biochemistry (U). |
| 3rd Week | Medical Biology (T/U), General Histology (T/U), Biophysics (T/U), Biochemistry (T/U), Anatomy (T). |
| 4th Week | Biochemistry (T/U), Medical Biology (T/U), General Histology (T/U), Anatomy (T), Biophysics (U). |
| 5th Week | Biochemistry (T/U), Medical Biology (T), General Histology (T/U), Anatomy (T/U). |
| 6th Week | General Histology (T/U), Biochemistry (T/U), Anatomy (T/U), Medical Biology (T). |
| 7th Week | Medical Biology (T/U), Biochemistry (T/U), Anatomy (T/U). |
| 8th Week | Medical Biology (T), Behavioral, Social and Human Sciences (T), Biochemistry (T/U), Anatomy (U), General Histology (U). |
| Description: T: Theoretical U: Application | |

| Number of Questions in the Board | | |
|----------------------------------|-------------|-------------|
| Exam Type | Theoretical | Application |
| Board Exam | 100 | 0 |
| Finale | 100 | 0 |
| Integration | 100 | 0 |

| Evaluation System | | |
|--|------------|------------------------|
| Semester Studies | Number | Total Contribution (%) |
| Continuation | 0 | 0 |
| Laboratory | 0 | 0 |
| Application | 5 | 12 |
| Fieldwork | 0 | 0 |
| Course-Specific Internship (If Available) | 0 | 0 |
| Assignments | 0 | 0 |
| Presentation | 0 | 0 |
| Projects | 0 | 0 |
| Seminar | 0 | 0 |
| Theoretical Midterm Exam | 1 | 28 |
| Finale | 1 | 60 |
| | Sum | 100 |
| Semester Studies | 1 | 40 |
| Final Work | 1 | 60 |
| | Sum | 100 |
| Explanation: While calculating the contribution rates of the evaluation system, SANKO University Associate Degree and Undergraduate Education and Examination Regulations and Faculty of Medicine Education and Measurement-Evaluation Directive are valid. | | |

| Student Workload Table | | | |
|---|-----------------------|-------------------------------|------------|
| Events | Number (weeks) | Duration (class hours) | Sum |
| Course Duration (Exam Week Included) | 8 | 13 | 108 |
| Laboratory | 0 | 0 | 0 |
| Application | 7 | 7 | 50 |
| Course-Specific Internship (If Available) | 0 | 0 | 0 |
| Fieldwork | 0 | 0 | 0 |
| Studying Outside the Classroom | 5 | 15 | 75 |
| Presentation/ Seminar | 0 | 0 | 0 |
| Project | 0 | 0 | 0 |
| Assignments | 0 | 0 | 0 |
| Board Exam | 0 | 0 | 0 |
| Final Exams | 0 | 0 | 0 |
| Total Workload | 20 | 35 | 233 |

| Program Qualifications | TIP102 COURSE BOARD LEARNING OBJECTIVES | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|
| | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | BC1 | BC2 | BC3 | BC4 | BC5 | BC6 | BC7 | BC8 | T1 | T2 | T3 |
| | PY_B1 | 5 | 5 | 5 | | | 5 | 5 | | | | | | | | 5 | 5 | | | 3 | 4 | | |
| PY_B2 | | | | 5 | 5 | | | 3 | | | | | | | | | | | | | | | |
| PY_B3 | | | | | | | | | 4 | 5 | 3 | 3 | | | | | | | | | | | |
| PY_B4 | | | | | | | | | | | | | | | | | | | | | | | 2 |
| PY_B5 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_B6 | | | | | | | | | | | | 5 | | | | | | | | | | | |
| PY_B7 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_B8 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_B9 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_B10 | | | | | | | | | 4 | 3 | 4 | 3 | | | | | | | | | | | |
| PY_B11 | | | | | | | | | 5 | 4 | 5 | 4 | | | | | | | | | | | |
| PY_B12 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_B13 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC1 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC2 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC3 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC4 | | | | | | | | | | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | | | |
| PY_BC5 | | | | | | | | | | | | | 3 | 3 | 3 | 3 | | | | | | | |
| PY_BC6 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC7 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC8 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC9 | | | | | | | | | | | | | | | | | | | | | | | 2 |
| PY_BC10 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC11 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC12 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC13 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_BC14 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T1 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T2 | | | | | | | | | | | | | | | | | | | | | 5 | 5 | 5 |
| PY_T3 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T4 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T5 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T6 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T7 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T8 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T9 | | | | | | | | | | | | | | | | | | | | | | | |
| PY_T10 | | | | | | | | | | | | | | | | | | | | | | | |

Explanation

PY: Program qualifications PY_B: Program competencies "Information" PY_BC: Programme qualifications "Skills"
 PY_T: Program competencies "Attitude"

B: Course Board's "Knowledge" Learning Objective BC: Course Board's "Skills" Learning Objective
 T: Course Board's "Attitude" Learning Objective

Level of Relationship between Program Competencies and Course Board Learning Objectives;

1: Very low 2: Miscarriage 3: Middle 4: High 5: Very high

Program Qualifications

KNOWLEDGE

1. To be able to explain the basic structure, development and normal functioning of the human body at the level of atoms, molecules, cells, tissues, organs and systems
2. To be able to question the abnormal structuring and functioning of the human body and to explain it with information based on qualified scientific research
3. Determinants of health and diseases; to be able to evaluate with individual, social and global dimensions
4. To be able to evaluate diseases, clinical decision-making and management processes under the guidance of evidence-based medicine practices
5. To be able to define practices for the protection and development of health in individual and social dimensions
6. To be able to explain the practices to protect and improve the health of vulnerable/vulnerable/disadvantaged/stigmatized groups
7. To be able to define effective communication methods and tools
8. To be able to explain the processes of a scientific research
9. To have a level of foreign language knowledge to follow scientific developments in the field of medicine
10. To be able to define the concepts of health and disease in an individual and social context, to explain health seeking and health protection behaviors, national health service delivery and administrative processes.
11. To be able to define the concepts of health and disease from a behavioral, social and human sciences perspective
12. To be able to explain the importance of professional organizations and to define their place in professional life
13. To be able to explain the concepts of medical law, health law and general law at a level that can defend their own rights and patient rights

SKILL

1. To be able to plan and carry out practices for the protection and development of health in individual and social dimensions in the provision of primary health care services.
2. To be able to take medical history from the patient and their relatives
3. To be able to perform physical examination, including the mental and cognitive status of individuals, to make a preliminary diagnosis, to plan diagnostic tests
4. To be able to manage the diagnosis and treatment processes by using the procedure steps rationally
5. To be able to apply medical interventions for diagnosis, treatment or prevention of individuals
6. To be able to organize and keep records of health and disease-related data obtained from individuals and society in a medical and administrative context.
7. To be able to use information management systems
8. To be able to inform the patient and their relatives before any procedure planned for the patient, to obtain consent, and to give bad news when necessary.
9. To be able to plan, implement and evaluate the results of a scientific research
10. To be able to work as a team by communicating effectively with colleagues, other healthcare professionals and other professional groups in the processes of protecting and developing health in individual and social dimensions and managing diseases.
11. To be able to carry out social responsibility projects
12. To show exemplary behaviors within the health team during service delivery, to be able to lead
13. To be able to plan and present health education to healthy/sick individuals and their relatives and other healthcare professionals by recognizing the characteristics, needs and expectations of the target audience
14. To be able to plan practices to protect and improve the health of vulnerable/vulnerable/disadvantaged/stigmatized groups

ECONOMY

1. To be able to exhibit an attitude towards the protection, development and advocacy of health in individual and social dimensions
2. To be able to adapt to these changes by making use of scientific and technological developments for professional and social changes and to demonstrate lifelong learning behavior.
3. To be able to fulfill its responsibilities within the framework of professional values, ethical principles and legal regulations without language, religion, race, gender, social and cultural discrimination among individuals in the society it serves.
4. To be able to advocate for the protection and development of the health of the individual and the society and the realization of health services for the benefit of the individuals who make up the society.
5. To be able to prioritize national and international laws and ethical values while fulfilling their duties and obligations during medical practice, taking into account the concepts of social reliability and social obligation
6. To be aware of and protect the importance of one's own and other health personnel's health, rights and safety in the provision of health services
7. To be able to take into account environmental characteristics, differences and changes in health service delivery.
8. To be able to make a self-assessment of the practices related to the profession
9. To be able to show a patient-centered approach in diagnosis, treatment, follow-up and rehabilitation processes
10. To be able to demonstrate the attitude and behavior of a responsible physician who adopts facilitating approaches and social justice principles while providing health services for sensitive/vulnerable/disadvantaged/stigmatized groups.