# Courses – ECTS Credits

|  |
| --- |
|  |
| Code | Course Name | ECTS | T+P+L | C/E | Language |
| Fall Semester |
| 521403201 | [EXPERIMENTAL BIOCHEMISTRY](#DERS521401201) | 7,5 | 2+2+0 | COMPULSORY | TURKISH |
| 521403202 | [CLINICAL LABORATORY DIAGNOSIS](#DERS521401202) | 7,5 | 3+0+0 | ELECTİVE | TURKISH |
| 521403203 | [HORMONE BIOCHEMISTRY](#DERS521401203) | 7,5 | 3+0+0 | ELECTİVE | TURKISH |
| 521403204 | [MEMBRANES AND TRANSPORT](#DERS521401204)  | 7,5 | 3+0+0 | ELECTİVE | TURKISH |
| 521403206 | [LIVER FUNCTION](#DERS521401206) | 7,5 | 2+2+0 | ELECTİVE | TURKISH |
| 521403208 | [INTRODUCTION TO BIOCHEMISTRY I](#DERS521401208) | 7,5 | 3+0+0 | COMPULSORY | TURKISH |
| 521403209 | [METABOLIC PATHWAYS AND BIOSYTHESIS I](#DERS521401209) | 7,5 | 2+0+0 | ELECTİVE | TURKISH |
| 521401700 | SPECIALIZATION FIELD COURSE | 5 | 3+0+0 | COMPULSORY | TURKISH |
|  |  |  |  |  |
| Spring Semester |
| 521404201 | [ELECTROLYTES AND WATER BALANCE](#DERS521402201) | 7,5 | 2+2+0 | ELECTİVE | TURKISH |
| 521404202 | [BIOCHEMICAL METHODS](#DERS521402202) | 7,5 | 2+2+0 | ELECTIVE | TURKISH |
| 521404203 | [BIOCHEMICAL PATHOLOGY](#DERS521402203) | 7,5 | 3+0+0 | ELECTİVE | TURKISH |
| 521404204 | [ENZYME BIOCHEMISTRY](#DERS521402204) | 7,5 | 3+0+0 | ELECTİVE | TURKISH |
| 521404205 | [NUCLEIC ACID BIOCHEMISTRY](#DERS521402205) | 7,5 | 3+0+0 | ELECTİVE | TURKISH |
| 521404206 | [RENAL FUNCTIONS AND URINE](#DERS521402206) | 7,5 | 2+2+0 | ELECTİVE | TURKISH |
| 521404207 | [INTRODUCTION TO BIOCHEMISTRY II](#DERS521402207) | 7,5 | 3+0+0 | COMPULSORY | TURKISH |
| 521404208 | [METABOLIC PATHWAYS AND BIOSYTHESIS II](#DERS521402208) | 7,5 | 2+0+0 | ELECTİVE | TURKISH |
| 521401700 | SPECIALIZATION FIELD COURSE | 5 | 3+0+0 | COMPULSORY | TURKISH |
|  |  |  |  |  |
|  |  |  |  |  |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521403201** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | EXPERIMENTAL BIOCHEMISTRY |  |
| **INSTRUCTOR NAME**Prof.Dr. Sema USLU | **COURSE LANGUAGE****Turkish: X****English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring ****Autumn **X** | 2 |   | 2  | 3  | 7,5 | COMPULSORY ELECTIVE **X**  |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |  1 | 50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  | X |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** |  Laboratory measurement methods, sources of error biochemical analysis will be described. |
| **COURSE AIMS** |  Diagnosis of certain diseases can be done through biochemical analysis. To that hand, the aim of Applied Biochemistry is to teach analysis methods of biological materials, e.g. fluids in the organism like blood, urine and their content in normal and pathological situations. |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** |  Burtis CA. Ashwood ER. (2006). TIETZ Textbook of clinical chemistry 4th Edition |
| **REFERENCES** |   |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Volumetric equipment and its oalibration |
| 2 |  | Types of centrifuges components of a centrifuge |
| 3 |  | Principles of centrifuge |
| 4 |  | Physical anol chemical units |
| 5 |  | Buffer solutions |
| 6 |  | Spectro photometers |
| 7 |  | Fluorometry, nephelometry and turbidimetry |
| 8 |  | Ara sınav |
| 9 |  | Electrophoresis |
| 10 |  | Chomatographg |
| 11 |  | Control of preanalytical variables |
| 12 |  | Computers in the clinical biochemistry |
| 13 |  | Amino asit and proteins analytes methods |
| 14 |  | Enzymes and carbonlıydrates analytes |
| 15 |  | Lipids, lipoproteins and apolipoproteins analytes |
| 16 |  | Yarı yıl sonu sınavı |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  |  |
| 2 | ask scientific questions and form hypothesis |  |  |  |
| 3 | search and interpret scientific literature |  |  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  **X** |  |
| 5 | learn how to use the experimental equipment effectively |  |  | **X**  |
| 6 | function on multi-disciplinary teams |  | **X** |  |
| 7 | identify, formulate, and solve medical problems |  |  |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | **X** |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  |  |
| 10 | use effective written and oral communication/presentation skills |  |  |  |
| 11 | get an understanding of professional and ethical responsibility |  |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  |  |

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| **Instructor Name****Sign** |  **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDİCAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521403202** | **DEPARTMENT:** MEDİCAL BIOCHEMISTRY |
| **COURSE NAME:** | CLINICAL LABORATORY DIAGNOSIS |  |
| **INSTRUCTOR NAME** | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
| Prof.Dr. İ.Özkan ALATAŞ |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
|  | **X** |  |  |

|  |  |  |
| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring ****Autumn **X** | 3  |   |   | 3  | 7,5  | COMPULSORY ELECTIVE **X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  | 50  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Final | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** |  Diseases diagnosis, treatment and follow-up evaluation of the laboratory tests used used in  |
| **COURSE AIMS** |  Interpretation of laboratory tests used in the teaching of clinical diagnosis |
| **COURSE OBJECTIVES** |  Clinical laboratory diagnosis and treatment of diseases in the application of laboratory tests |
| **TEXTBOOK(S)** |  Clinical Chemistry and Molecular Diagnostics (Burtis, Ashwood, Bruns) |
| **REFERENCES** |  Clinical Chemistry, Clinical Laboratory |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Clinical enzymes |
| 2 |  | Clinical enzymes |
| 3 |  | Liver enzymes |
| 4 |  | Lipid tests |
| 5 |  | MİD-TERM |
| 6 |  | Diabetes mellitus tests |
| 7 |  | Thyroid hormones |
| 8 |  | Mineral metabolism tests |
| 9 |  | Myocardial tests |
| 10 |  | Hormone tests |
| 11 |  | FİNAL |
| 12 |  |  |
| 13 |  |  |
| 14 |  |  |
| 15 |  |  |
| 16 |  |  |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data | **X** |  |  |
| 5 | learn how to use the experimental equipment effectively | **X** |  |  |
| 6 | function on multi-disciplinary teams |  |  | **X** |
| 7 | identify, formulate, and solve medical problems |  |  | **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills |  | **X** |  |
| 11 | get an understanding of professional and ethical responsibility |  | **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  | **X** |  |

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| **Instructor Name****Sign** |  **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF** **MEDICAL BIOCHEMISTRY**

**COURSE INFORMATION FORM**

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| --- | --- | --- |
| **COURSE CODE:** | **521403203** | **DEPARTMENT:** MEDİCAL BIOCHEMISTRY |
| **COURSE NAME:** | HORMONE BIOCHEMISTRY |  |
| **INSTRUCTOR NAME**Prof.Dr. İ.Özkan ALATAŞ | **COURSE LANGUAGE****Turkish: X** **English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring ****Autumn **X**  | 3  | 0  | 3  | 3  | 7,5 | COMPULSORY ELECTIVE ** X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |  1 |  50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | In this course, the general description of hormones and classification, the mechanisms of action at the cellular level will be examined. In addition, hormones secreted by the endocrine glands such as the pituitary, thyroid, adrenal medulla and cortex, pancreas, ovary, testes, will be discussed. Biochemical measurement methods and principles of the hormones will be examined. |
| **COURSE AIMS** | The aim of this coursei is to investigate the role of hormones which have an important role in the regulation of organism and normal and pathological conditions in health and disease. |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** | * [Peter A. Mayes](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_1/189-1561636-9233633?_encoding=UTF8&field-author=Peter%20A.%20Mayes&ie=UTF8&search-alias=books&sort=relevancerank), [Robert K. Murray](http://www.amazon.com/Robert-K.-Murray/e/B0034OONIY/ref%3Dntt_athr_dp_pel_2/189-1561636-9233633) [Daryl K. Granner](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_3/189-1561636-9233633?_encoding=UTF8&field-author=Daryl%20K.%20Granner&ie=UTF8&search-alias=books&sort=relevancerank), (2004). **Harper's Biochemistry.** 25th Edition. United States of America

 Burtis, CA. & Ashwood, ER. (2006). TIETZ Textbook of Clinical Chemistry. 4th Edition. Lehninger, Nelson, DL. & Cox, MM. (2000). Principles of Biochemistry. Third EditionOnat T, Emerk K, Sözmen EY, (2006) İnsan Biyokimyası Palme Yayıncılık* Harvey RA, (2008)[**Biochemistry (Lippincott's Illustrated Reviews Series**)](http://www.amazon.com/Biochemistry-Lippincotts-Illustrated-Reviews-Richard/dp/160831412X/ref%3Dsr_1_1?s=books&ie=UTF8&qid=1352716911&sr=1-1&keywords=lippincott+biochemistry) 5 th Edition
* [Gürdöl](http://www.nobeltip.com/tr/products.asp?ID=22&AID=23061&title=Prof.Dr.%20Figen%20Gürdöl&sort=&strSearch=) F,  [Ademoğlu](http://www.nobeltip.com/tr/products.asp?ID=22&AID=25127&title=%20Prof.Dr.%20Evin%20Ademoğlu&sort=&strSearch=) E, (2010) **Biyokimya,** Nobel Tıp Kitapevi
 |
| **REFERENCES** |  |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Definition and Classification of Hormone |
| 2 |  | Properties of Hormone Systems  |
| 3 |  | Mechanisms of Action of Hormones |
| 4 |  | Adrenal Cortex Hormones |
| 5 |  | Adrenal Medulla Hormones |
| 6 |  | Pituitary Hormones |
| 7 |  | Hypothalamic Hormones |
| 8 |  | Midterm Exam |
| 9 |  | Growth Hormone |
| 10 |  | Gonads (Male) |
| 11 |  | Gonads (female), Reproductive Cycle |
| 12 |  | Gastrointestinal Hormones |
| 13 |  | Pancreatic hormones (insulin, glucagon) |
| 14 |  | Thyroid Hormones |
| 15 |  | Hormones that regulate the metabolism of calcium |
| 16 |  | Final Exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  **X** |  |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X**  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X**  |
| 5 | learn how to use the experimental equipment effectively |  |  **X** |  |
| 6 | function on multi-disciplinary teams | **X** |  |  |
| 7 | identify, formulate, and solve medical problems | **X** |  |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X**  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  **X** |  |
| 10 | use effective written and oral communication/presentation skills | **X** |  |  |
| 11 | get an understanding of professional and ethical responsibility |  **X** |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | **X** |  |  |

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| **Instructor Name****Sign**Prof.Dr. İ.Özkan ALATAŞ | **Date**   |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMISTRY**

**COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** **521403204** |  | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | MEMBRANES AND TRANSPORT |  |
| **INSTRUCTOR NAME**Assist. Prof. Dr. Fahrettin AKYÜZ | **COURSE LANGUAGE****Turkish: X****English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring ****Autumn **X** | 3  |   |   |  3 | 7,5 | COMPULSORY SELECTIVE **X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  | 50  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(Written exam) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  | 1 |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Membrane structure, membrane lipid blayer, cholesterol of membrane, phospholipids, glycolipids, apolar charasteristic of membranes, membrane proteins, membrane carbonhydrates, receptors, passive transport, diffusion, active transport,endocytosis,exocytosis |
| **COURSE AIMS** |  To give information about cell membrane structure with active and passive transport systems |
| **COURSE OBJECTIVES** |  To teach to be carried substance from cell membranes |
| **TEXTBOOK(S)** | Principles of Biochemistry, Albert Lehninger, fifth ed. 2009Worth publishers, Newyork |
| **REFERENCES** | Biochemistry, Lubert Strayer, Sixth ed. 2007W.H. Freewar and company, Newyork.Medical Biochemistry, John Baynes, Marek H Dominiczek,Harcourt Brace and Company, Mosby, Basildon, 2004, England.Biochemistry, Dacid E. Metzler, Second ed. Harcourt academic press, 2001.Human Biochemistry, Onat T., Emerk K.., Sönmez E.Y., Palme Publishing, second ed., 2007, Ankara.Biochemistry, Gürdöl F., Ademoğlu E., Nobel publishing, Second ed. 2010. |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | The cell membrane structure |
| 2 |  | Membrane lipids and cholesterol |
| 3 |  | Phospholipids and glycolipids |
| 4 |  | Membrane proteins |
| 5 |  | Erythrocyte membrane proteins |
| 6 |  | Membrane carbohydrates |
| 7 |  | Receptors |
| 8 |  | Mid-term exam |
| 9 |  | Passive transport, diffusion |
| 10 |  | Active transport, ATP ase transport systems |
| 11 |  | Na- K ATP ase |
| 12 |  | Ca- ATP ase |
| 13 |  | İonic selectivity channels |
| 14 |  | Endocytosis |
| 15 |  | Exocytosis |
| 16 |  | Final exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **X** |
| 3 | search and interpret scientific literature |  |  | **X** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **X** |  |
| 5 | learn how to use the experimental equipment effectively |  | **X** |  |
| 6 | function on multi-disciplinary teams |  | **X** |  |
| 7 | identify, formulate, and solve medical problems |  | **X** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **X** |
| 11 | get an understanding of professional and ethical responsibility |  |  | **X** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **X** |

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| **Instructor Name****Sign**Assist. Prof. Dr. Fahrettin AKYÜZ |  **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF** **MEDICAL BIOCHEMISTRY**

**COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521403206** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** |  LIVER FUNCTION |  |
| **INSTRUCTOR NAME**Prof.Dr. İ.Özkan ALATAŞ | **COURSE LANGUAGE****Turkish: X** **English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring ****Autumn **X**  | 2  | 2  | 0 | 3  | 7,5 | COMPULSORY ELECTIVE ** X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |  1 |  50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | The liver is an organ metabolically active of the organism. In this course will investigate the functions of liver such as detoxification, storage, RES function, protein metabolism, carbohydrate metabolism, lipid metabolism and catabolism of hormones. The biochemical basic of the tests that determine of these functions, will be examined and discussed. |
| **COURSE AIMS** | The aim of this course is to learn liver function and their importance for human life. The importance of laboratory tests, their accuracy and clinical usage will be discussed. |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** | * [Peter A. Mayes](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_1/189-1561636-9233633?_encoding=UTF8&field-author=Peter%20A.%20Mayes&ie=UTF8&search-alias=books&sort=relevancerank), [Robert K. Murray](http://www.amazon.com/Robert-K.-Murray/e/B0034OONIY/ref%3Dntt_athr_dp_pel_2/189-1561636-9233633) [Daryl K. Granner](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_3/189-1561636-9233633?_encoding=UTF8&field-author=Daryl%20K.%20Granner&ie=UTF8&search-alias=books&sort=relevancerank), (2004). **Harper's Biochemistry.** 25th Edition. United States of America

 Burtis, CA. & Ashwood, ER. (2006). TIETZ Textbook of Clinical Chemistry. 4th Edition. Lehninger, Nelson, DL. & Cox, MM. (2000). Principles of Biochemistry. Third EditionOnat T, Emerk K, Sözmen EY, (2006) İnsan Biyokimyası Palme Yayıncılık* Harvey RA, (2008)[**Biochemistry (Lippincott's Illustrated Reviews Series**)](http://www.amazon.com/Biochemistry-Lippincotts-Illustrated-Reviews-Richard/dp/160831412X/ref%3Dsr_1_1?s=books&ie=UTF8&qid=1352716911&sr=1-1&keywords=lippincott+biochemistry) 5 th Edition
* [Gürdöl](http://www.nobeltip.com/tr/products.asp?ID=22&AID=23061&title=Prof.Dr.%20Figen%20Gürdöl&sort=&strSearch=) F,  [Ademoğlu](http://www.nobeltip.com/tr/products.asp?ID=22&AID=25127&title=%20Prof.Dr.%20Evin%20Ademoğlu&sort=&strSearch=) E, (2010) **Biyokimya,** Nobel Tıp Kitapevi
* Mehmetoğlu İ, (2007) **Klinik Biyokimya Laboratuvarı El Kitabı**, Nobel Tıp Kitapevi
 |
| **REFERENCES** |   |

|  |  |
| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Liver Anatomy and Cellular Organelles |
| 2 |  | Functions of the liver |
| 3 |  | Carbohydrate Digestion and Absorption |
| 4 |  | Carbohydrate metabolism in the liver |
| 5 |  | Lipid metabolism in the liver |
| 6 |  | Destruction of hemoglobin, bilirubin Structure and Metabolism |
| 7 |  | Classification of jaundice |
| 8 |  | Midterm Exam |
| 9 |  |  The prorerties of Unconjugated and conjugated bilirubin  |
| 10 |  | Bile Acids and Metabolism |
| 11 |  | Cholesterol Metabolism |
| 12 |  | Protein synthesis in the liver |
| 13 |  | Metabolic Functions |
| 14 |  | Laboratory in Diagnosis and Treatment of Liver Diseases |
| 15 |  | Liver Function Tests |
| 16 |  | Final Exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  **X** |  |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X**  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X**  |
| 5 | learn how to use the experimental equipment effectively |  | **X**  |  |
| 6 | function on multi-disciplinary teams | **X** |  |  |
| 7 | identify, formulate, and solve medical problems | **X**  |  |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X**  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X**  |  |
| 10 | use effective written and oral communication/presentation skills | **X** |  |  |
| 11 | get an understanding of professional and ethical responsibility | **X**  |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | **X** |  |  |

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| **Instructor Name****Sign**Prof.Dr. İ.Özkan ALATAŞ |  **Date**  |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMİSTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521403208** | **DEPARTMENT:** MEDICAL BIOCHEMİSTRY |
| **COURSE NAME:** | INTRODUCTION TO BIOCHEMISTRY I |  |
| **INSTRUCTOR NAME** | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
| Prof.Dr. Güngör KANBAK |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** |  | **** |

|  |  |  |
| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring Autumn **X** | 3 | 0  |  0 | 3 | 7,5 | COMPULSORY ELECTIVE **X**  |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |   |   |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam | 1 |  50 |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam | **1** | **50** |
| Other(……………….) |  |  |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
| **x** |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** |  Proteins,enzymes,carbohydrates,nucleic acids and oxidative phosphorilation |
| **COURSE AIMS** | To teach proteins,enzymes,carbohydrates,nucleic acids and oxidative phosphorilation in biochemistry the levels of high degree  |
| **COURSE OBJECTIVES** |  To teach some biochemical chapters in differnt discpline students  |
| **TEXTBOOK(S)** |  Lecture notes |
| **REFERENCES** |   |

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| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Amino acids |
| 2 |  | Amino acids |
| 3 |  | Proteins |
| 4 |  | Proteins |
| 5 |  | Enzymes |
| 6 |  | Classification of enzymes and enzyme kinetics  |
| 7 |  | Classification of enzymes and enzyme kinetics |
| 8 |  | The general princples of carboydrate |
| 9 |  | Carbohydrate metabolism |
| 10 |  | The general structure of nucleic acids |
| 11 |  | Nucleic acid metabolism |
| 12 |  | Structure of mitochondria |
| 13 |  | Oxidative phosphorilation |
| 14 |  | Oxidative phosphorilation |
| 15 |  |  |
| 16 |  |  |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences | **X** |  |  |
| 2 | ask scientific questions and form hypothesis | **X** |  |  |
| 3 | search and interpret scientific literature | **X** |  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data | **X** |  |  |
| 5 | learn how to use the experimental equipment effectively | **X** |  |  |
| 6 | function on multi-disciplinary teams |  |  | **X**  |
| 7 | identify, formulate, and solve medical problems |  | **X** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X** |  |
| 9 | understand the impact of experimental solutions on national and international sciences | **X** |  |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **X** |
| 11 | get an understanding of professional and ethical responsibility | **X**  |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  | **X** |  |

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| **Instructor Name** **Sign**Prof.Dr. Güngör KANBAK |  **Date**13.11.2012 |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521403209** | **DEPARTMENT: MEDICAL BIOCHEMISTRY** |
| **COURSE NAME:** | **METABOLIC PATHWAYS AND BIOSYTHESIS I** |  |
| **INSTRUCTOR NAME** | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
| **Yrd. Doç. Dr. Zeynep** **KÜSKÜ KİRAZ** |  |  | **X** |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
|  | **X** |  |  |

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| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Autumn **X** Spring  |  2 |  0 |   |  2 | 7,5 | COMPULSORY ELECTIVE **X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  | 50  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Final | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Metabolic pathways and biosynthesis of proteins, nucleotides and heme molecules which are,nitrogenous biomolecules |
| **COURSE AIMS** | To examine the metabolism of amino acids, proteins, nucleotides and heme molecules at the molecular level in tissues, organs and cells |
| **COURSE OBJECTIVES** | Learning about protein degradation and amino acid metabolism , and to know the synthesis and destruction pathways of nucleotides and heme molecules.  |
| **TEXTBOOK(S)** | Gurdol Figen, Tıbbi Biyokimya, Nobel Tıp Kitapevi, 2015. |
| **REFERENCES** | Murray R.K, Bander D.A, Botham K.M, Kennelly P.J, Rodwell V.W, Weil P.A. Harper’in Biyokimyası. Yirmidokuzuncu baskı. Çev.Ed: Akdoğan G.G, Ersöz B, Turgan N. Nobel tıp Kitapevi, 2015. |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Overview of the metabolic pathways |
| 2 |  | Nutritional proteins, destruction of the endogenous proteins, and the protein digestion |
| 3 |  | Amino acid absorption and the distribution in the body |
| 4 |  | Common metabolic pathways of the amino acids |
| 5 |  | Glutamine, urea synthesis and the metabolic end of the carbon skeleton of amino acids |
| 6 |  | Biosynthesis of the biological amines and the endogenous amino acids |
| 7 |  | Specific metabolites of the amino acids |
| 8 |  | MIDTERM |
| 9 |  | Amino acid metabolism related diseases |
| 10 |  | Introduction to the nucleotide metabolism |
| 11 |  | Synthesis of the purine nucleotides |
| 12 |  | Synthesis of the pyrimidine nucleotides |
| 13 |  | Purine and pyrimidine nucleotide degradation, Nucleotide metabolism disorders |
| 14 |  | The structure of porphyrins, heme synthesis |
| 15 |  | Heme destruction |
| 16 |  | FINAL |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data | **X**  |  |  |
| 5 | learn how to use the experimental equipment effectively | **X** |  |  |
| 6 | function on multi-disciplinary teams |  |  | **X** |
| 7 | identify, formulate, and solve medical problems |  | **X** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | **X** |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **X**  |
| 11 | get an understanding of professional and ethical responsibility |  |  **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  | **X** |  |
| 13 | other (……………………………………….)  |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name****Sign**Yrd. Doç. Dr. Zeynep KÜSKÜ KİRAZ |  **Date**18/11/2016 |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF** **MEDICAL BIOCHEMISTRY**

**COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521404201** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | ELECTROLYTES AND WATER BALANCE |  |
| **INSTRUCTOR NAME**Prof.Dr. İ.Özkan ALATAŞ | **COURSE LANGUAGE****Turkish: X** **English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X** Autumn **** | 2  | 2  | 0 | 3  | 7,5 | COMPULSORY ELECTIVE ** X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |  1 |  50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Electrolytes and water molecules are vital molecules of the organism. In this course the importance and the clinical conditions caused by increase or decrease of sodium, potassium, chloride, bicarbonate, calcium, phosphorus and magnesium will be explained. In addition, it will be examined to take a suitable sample for the measurement of electrolytes, measurement methods, maintaining of water balance in organism and water intoxication. |
| **COURSE AIMS** | The purpose of this course, is to learn the normal state of body fluids and electrolytes fluid exhange between plasma and intestinal fluid in normal conditions by the normal plasma and interstitial fluid t by the maintenance of body fluid and electrolyte homeostasis and disorders dealing with body fluids and blood circulation diseases. |
| **COURSE OBJECTIVES** |  |
| **TEXTBOOK(S)** | * [Peter A. Mayes](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_1/189-1561636-9233633?_encoding=UTF8&field-author=Peter%20A.%20Mayes&ie=UTF8&search-alias=books&sort=relevancerank), [Robert K. Murray](http://www.amazon.com/Robert-K.-Murray/e/B0034OONIY/ref%3Dntt_athr_dp_pel_2/189-1561636-9233633) [Daryl K. Granner](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_3/189-1561636-9233633?_encoding=UTF8&field-author=Daryl%20K.%20Granner&ie=UTF8&search-alias=books&sort=relevancerank), (2004). **Harper's Biochemistry.** 25th Edition. United States of America

 Burtis, CA. & Ashwood, ER. (2006). TIETZ Textbook of Clinical Chemistry. 4th Edition. Lehninger, Nelson, DL. & Cox, MM. (2000). Principles of Biochemistry. Third EditionOnat T, Emerk K, Sözmen EY, (2006) İnsan Biyokimyası Palme Yayıncılık* Harvey RA, (2008)[**Biochemistry (Lippincott's Illustrated Reviews Series**)](http://www.amazon.com/Biochemistry-Lippincotts-Illustrated-Reviews-Richard/dp/160831412X/ref%3Dsr_1_1?s=books&ie=UTF8&qid=1352716911&sr=1-1&keywords=lippincott+biochemistry) 5 th Edition
* [Gürdöl](http://www.nobeltip.com/tr/products.asp?ID=22&AID=23061&title=Prof.Dr.%20Figen%20Gürdöl&sort=&strSearch=) F,  [Ademoğlu](http://www.nobeltip.com/tr/products.asp?ID=22&AID=25127&title=%20Prof.Dr.%20Evin%20Ademoğlu&sort=&strSearch=) E, (2010) **Biyokimya,** Nobel Tıp Kitapevi
* Mehmeroğlu İ, (2007) Klinik Biyokimya Laboratuvarı El Kitabı, Nobel Tıp Kitapevi
 |
| **REFERENCES** |   |

|  |  |
| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Properties of Water and Water Distribution in the organism |
| 2 |  | Water intoxication and dehydration |
| 3 |  | Acid-base balance and pH |
| 4 |  | Buffer Systems |
| 5 |  | The Role of Acid-Base Balance in the lung and kidney, and Acid-Base Balance Disorders |
| 6 |  | Properties of sodium and Pathological Changes  |
| 7 |  | Properties of potassium and Pathological Changes  |
| 8 |  | Midterm Exam |
| 9 |  | Properties of chlorine and Pathological Changes  |
| 10 |  | Properties of calcium and Pathological Changes  |
| 11 |  | Properties of Phosphorus and Pathological Changes  |
| 12 |  | Properties of magnesium and Pathological Changes  |
| 13 |  | Mineral Metabolism |
| 14 |  | Methods of Measurement of electrolytes and minerals |
| 15 |  | Water Features and Water Distribution in the organism |
| 16 |  | Final Exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences | **X**  |  |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X**  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X**  |
| 5 | learn how to use the experimental equipment effectively |  | **X**  |  |
| 6 | function on multi-disciplinary teams | **X** |  |  |
| 7 | identify, formulate, and solve medical problems |  **X** |  |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X**  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  **X** |  |
| 10 | use effective written and oral communication/presentation skills | **X** |  |  |
| 11 | get an understanding of professional and ethical responsibility | **X**  |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | **X** |  |  |

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| --- | --- |
| **Instructor Name****Sign**Prof.Dr. İ.Özkan ALATAŞ | **Date** |

** ESOGU ENSTITUTE OF HEALTH SCIENCE**

 **DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521404202** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | BIOCHEMICAL METHODS |  |
| **INSTRUCTOR NAME** | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
| Dr.Öğr.Üyesi Zeynep KÜSKÜ KİRAZ |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
|  | **X** |  |  |

|  |  |  |
| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X**Autumn **** |  2 |  2 |   | 3 | 7,5 | COMPULSORY ELECTIVE |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  | 50  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Final | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Selection and analitical evaluation of methods |
| **COURSE AIMS** |  Teaching the measurement methods used in clinical laboratories |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** |  Tietz Textbook of Clinical Chemistry and Molecular Diagnostics (Burtis, Ashwood, Bruns) |
| **REFERENCES** |  Clinical Chemistry (Lawrence A. Kaplan, Amadeo J. Pesce) |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | General laboratory techniques |
| 2 |  | Laboratory safety |
| 3 |  | Method selection |
| 4 |  | Medical criteria |
| 5 |  | Analytical performance criteria |
| 6 |  | Basic concepts in relation to analitical methods |
| 7 |  | Trueness, accuracy and precision |
| 8 |  | MID EXAM |
| 9 |  | Analytical measurement range |
| 10 |  | Limit of detection |
| 11 |  | Analytical goals |
| 12 |  | Qualitative methods |
| 13 |  | Method comparison |
| 14 |  | Basic error model |
| 15 |  | Guıdelınes and accredıtation |
| 16 |  | FİNAL |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  | **X** |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X**  |
| 5 | learn how to use the experimental equipment effectively |  | **X**  |  |
| 6 | function on multi-disciplinary teams |  |  | **X** |
| 7 | identify, formulate, and solve medical problems |  |  | **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  |  | **X** |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills | **X** |  |  |
| 11 | get an understanding of professional and ethical responsibility |  | **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  | **X** |  |

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| **Instructor Name****Sign**Dr.Öğr.Üyesi Zeynep KÜSKÜ KİRAZ |  **Date**20/11/2015 |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF** **MEDICAL BIOCHEMISTRY**

**COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521404203** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | BIOCHEMICAL PATHOLOGY |  |
| **INSTRUCTOR NAME**Prof.Dr. İ.Özkan ALATAŞ | **COURSE LANGUAGE****Turkish: X** **English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X**Autumn **** | 3  | 0  | 0 | 3  | 7,5 | COMPULSORY ELECTIVE **X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |  1 |  50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Chronic renal failure, diabetes mellitus, disorders of lipoprotein metabolism, atherosclerosis formation, porphyria and bilirubin metabolism disorders, avitaminosis, carbohydrate and lipid storage diseases and biochemical mechanisms that play a role in these diseases and disorders will be discussed.. |
| **COURSE AIMS** | The purpose of this course is to exhibit the basic biochemical disorder or change involve in different pathological conditions. |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** | * [Peter A. Mayes](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_1/189-1561636-9233633?_encoding=UTF8&field-author=Peter%20A.%20Mayes&ie=UTF8&search-alias=books&sort=relevancerank), [Robert K. Murray](http://www.amazon.com/Robert-K.-Murray/e/B0034OONIY/ref%3Dntt_athr_dp_pel_2/189-1561636-9233633) [Daryl K. Granner](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_3/189-1561636-9233633?_encoding=UTF8&field-author=Daryl%20K.%20Granner&ie=UTF8&search-alias=books&sort=relevancerank), (2004). **Harper's Biochemistry.** 25th Edition. United States of America

 Burtis, CA. & Ashwood, ER. (2006). TIETZ Textbook of Clinical Chemistry. 4th Edition. Lehninger, Nelson, DL. & Cox, MM. (2000). Principles of Biochemistry. Third EditionOnat T, Emerk K, Sözmen EY, (2006) İnsan Biyokimyası Palme Yayıncılık* Harvey RA, (2008)[**Biochemistry (Lippincott's Illustrated Reviews Series**)](http://www.amazon.com/Biochemistry-Lippincotts-Illustrated-Reviews-Richard/dp/160831412X/ref%3Dsr_1_1?s=books&ie=UTF8&qid=1352716911&sr=1-1&keywords=lippincott+biochemistry) 5 th Edition
* [Gürdöl](http://www.nobeltip.com/tr/products.asp?ID=22&AID=23061&title=Prof.Dr.%20Figen%20Gürdöl&sort=&strSearch=) F,  [Ademoğlu](http://www.nobeltip.com/tr/products.asp?ID=22&AID=25127&title=%20Prof.Dr.%20Evin%20Ademoğlu&sort=&strSearch=) E, (2010) **Biyokimya,** Nobel Tıp Kitapevi
 |
| **REFERENCES** |   |

|  |  |
| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Acute Renal Failure |
| 2 |  | Chronic Renal Failure |
| 3 |  | Diabetes Mellitus |
| 4 |  | Hyperlipoproteinemia |
| 5 |  | Mechanisms of Atherosclerosis |
| 6 |  | Bilirubin Metabolism and Disorders |
| 7 |  | Nucleic Acid Metabolism and Disorders |
| 8 |  | Midterm Exam |
| 9 |  | Fat and Water Soluble Vitamin Metabolism-Avitaminosis and Hypervitaminosis States |
| 10 |  | Inflammation, Host Response of Microorganisms |
| 11 |  | Thyroid Gland Disorders and Biochemical Changes |
| 12 |  | Myocardial Infarct |
| 13 |  | Osteoporosis and Bone Metabolism |
| 14 |  | Biochemical Theories Related to Cancer Formation |
| 15 |  | Glycogen Storage Disease |
| 16 |  | Final Exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences | **X**  |  |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  | **X**  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  |  **X** |
| 5 | learn how to use the experimental equipment effectively |  | **X**  |  |
| 6 | function on multi-disciplinary teams | **X** |  |  |
| 7 | identify, formulate, and solve medical problems | **X**  |  |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X**  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X**  |  |
| 10 | use effective written and oral communication/presentation skills | **X** |  |  |
| 11 | get an understanding of professional and ethical responsibility | **X**  |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | **X** |  |  |

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| **Instructor Name****Sign**Prof.Dr. İ.Özkan ALATAŞ | **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:**  | **521404204** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:**  | ENZYME BIOCHEMISTRY |  |
| **INSTRUCTOR NAME**Assist. Prof. Dr. Fahrettin AKYÜZ | **COURSE LANGUAGE****Turkish: X****English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

|  |  |  |
| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X**Autumn **** |  3 |   |   |  3 | 7,5 | COMPULSORY SELECTIVE ** X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  | 50  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(written exam) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  | 1 |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Enzymes and some definiciations, enzymatic reaction and chemical reaction, classified of enzymes,effecting factors on enzyme activities,Michaelis- menten equation, inhibitions of enzymes |
| **COURSE AIMS** | To describe basic concepts about enzymes and activities of enzymes. |
| **COURSE OBJECTIVES** | To give information about general features of enzymes before clinical enzymolgy  |
| **TEXTBOOK(S)** | Principles of Biochemistry, Albert Lehninger, fifth ed. 2009Worth publishers, Newyork |
| **REFERENCES** | Biochemistry, Lubert Strayer, Sixth ed. 2007W.H. Freewar and company, Newyork.Medical Biochemistry, John Baynes, Marek H Dominiczek,Harcourt Brace and Company, Mosby, Basildon, 2004, England.Biochemistry, Dacid E. Metzler, Second ed. Harcourt academic press, 2001.Human Biochemistry, Onat T., Emerk K.., Sönmez E.Y., Palme Publishing, second ed., 2007, Ankara.Biochemistry, Gürdöl F., Ademoğlu E., Nobel publishing, Second ed. 2010. |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Some definiations: Enzyme, conzyme, holoenzyme, apoenzyme, proenzyme, prosthetic group, izoenzyme  |
| 2 |  | Enzyme structure, differents in enzyme and catalyzer |
| 3 |  | Classified and named of enzymes |
| 4 |  | Active site of enzymes and aminoacids in active site |
| 5 |  | Effecting factors on enzyme activities |
| 6 |  | Specifity of enzymes |
| 7 |  | Connection of enzyme- substrate, Michaelis-Menten equation |
| 8 |  | Mid-term exam |
| 9 |  | Enzyme inhibitions, reversible-irreversible inhibitions |
| 10 |  | Competitive, noncompetitive,uncompetitive inhibitions |
| 11 |  | Allosteric inhibitions |
| 12 |  | Enzme systems, feed- back inhibitions |
| 13 |  | Defence and stabilization of enzymes |
| 14 |  | Enzyme activities measuring methods |
| 15 |  | Some important enzymes |
| 16 |  | Final exam |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | **X** |
| 2 | ask scientific questions and form hypothesis |  |  | **X** |
| 3 | search and interpret scientific literature |  |  | **X** |
| 4 | design and conduct experiments as well as analyze and interpret the data |  | **X** |  |
| 5 | learn how to use the experimental equipment effectively |  | **X** |  |
| 6 | function on multi-disciplinary teams |  | **X** |  |
| 7 | identify, formulate, and solve medical problems |  | **X** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills |  |  | **X** |
| 11 | get an understanding of professional and ethical responsibility |  | **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  | **X** |  |
| 13 | other (……………………………………….)  |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name****Sign**Assist. Prof. Dr. Fahrettin AKYÜZ  |  **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521404205** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | NUCLEIC ACID BIOCHEMISTRY |  |
| **INSTRUCTOR NAME** Prof.Dr. Ömer ÇOLAK | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

|  |  |  |  |
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| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
|  | **X** |  |  |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X**Autumn  |  3 |  0 |   | 3  | 7,5 | COMPULSORY ELECTIVE **X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |   | 40  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(Written Exam) |  | 60 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  | **X** |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** |  Molecular composition and structure of nucleic acid, chemical properties, nucleic acid biochemistry, nucleic acid analyses and diagnostic applications. |
| **COURSE AIMS** |  To understand the nucleic acid of biochemical properties and applications. |
| **COURSE OBJECTIVES** |  To teach the nucleic acid biochemistry and diagnostic applications. |
| **TEXTBOOK(S)** |  Biyokimya, Prof.Dr. Ergin M.Gözükara, Ofset Repromat Ltd.Şti.1990,1.nd edition (Ankara) |
| **REFERENCES** | 1-Tietz Textbook of Clinical Chemistry, Burtish Ashwood, W.B. Saunders Company 1994, 2. baskı (Printed in U.S.A )2-Harper’s Biochemistry,Robert K. Murray,MD,PhD, Darly K. Granner,MD, Peter A.Mayes, PhD,Dsc, Wictor W.Rodwell Ph.D, Appleton & Lange 1996, 24. baskı (Printed in U.S.A.) |

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|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Molecular composition and structure of nucleic acid |
| 2 |  | Biochemical properties |
| 3 |  | Replications, transcription and translation of nucleic acid |
| 4 |  | WRITTEN EXAM |
| 5 |  | Nucleic acid enzymes |
| 6 |  | Nucleic acid analyses |
| 7 |  | Diagnostic applications |
| 8 |  | WRITTEN EXAM |
| 9 |  |  |
| 10 |  |  |
| 11 |  |  |
| 12 |  |  |
| 13 |  |  |
| 14 |  |  |
| 15 |  |  |
| 16 |  |  |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  | **X** |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  |  **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X**  |
| 5 | learn how to use the experimental equipment effectively |  |  **X** |  |
| 6 | function on multi-disciplinary teams |  |  |  **X** |
| 7 | identify, formulate, and solve medical problems |  |  |  **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | **X**  |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  |  | **X** |
| 10 | use effective written and oral communication/presentation skills |  | **X**  |  |
| 11 | get an understanding of professional and ethical responsibility |  |  |  **X** |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  |  | **X** |
| 13 | other (……………………………………….)  |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

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| **Instructor Name****Sign**Prof.Dr. Ömer ÇOLAK |  **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF** **MEDICAL BIOCHEMISTRY**

**COURSE INFORMATION FORM**

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| --- | --- | --- |
| **COURSE CODE:** | **521404206** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:**  | RENAL FUNCTIONS AND URINE |  |
| **INSTRUCTOR NAME**Prof.Dr. İ.Özkan ALATAŞ | **COURSE LANGUAGE****Turkish: X** **English: ** | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** | **** | **** |

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| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X**Autumn  | 2  | 2  | 0 | 3  | 7,5 | COMPULSORY ELECTIVE ** X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term |  1 |  50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | The basic function of the kidney is removal of waste products, which composed by daily metabolism, In addition, regulatory and endocrine functions of the kidney and clinical case due to dysfunction will be examined in this course. Moreover, for renal function tests, urine formation and urine analysis is within the content of the course. |
| **COURSE AIMS** | The aim of this course was to understand the importance of kidney in homeostasis and evalution of renal functions. |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** | * [Peter A. Mayes](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_1/189-1561636-9233633?_encoding=UTF8&field-author=Peter%20A.%20Mayes&ie=UTF8&search-alias=books&sort=relevancerank), [Robert K. Murray](http://www.amazon.com/Robert-K.-Murray/e/B0034OONIY/ref%3Dntt_athr_dp_pel_2/189-1561636-9233633) [Daryl K. Granner](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_3/189-1561636-9233633?_encoding=UTF8&field-author=Daryl%20K.%20Granner&ie=UTF8&search-alias=books&sort=relevancerank), (2004). **Harper's Biochemistry.** 25th Edition. United States of America

 Burtis, CA. & Ashwood, ER. (2006). TIETZ Textbook of Clinical Chemistry. 4th Edition. Lehninger, Nelson, DL. & Cox, MM. (2000). Principles of Biochemistry. Third EditionOnat T, Emerk K, Sözmen EY, (2006) İnsan Biyokimyası Palme Yayıncılık* Harvey RA, (2008)[**Biochemistry (Lippincott's Illustrated Reviews Series**)](http://www.amazon.com/Biochemistry-Lippincotts-Illustrated-Reviews-Richard/dp/160831412X/ref%3Dsr_1_1?s=books&ie=UTF8&qid=1352716911&sr=1-1&keywords=lippincott+biochemistry) 5 th Edition
* [Gürdöl](http://www.nobeltip.com/tr/products.asp?ID=22&AID=23061&title=Prof.Dr.%20Figen%20Gürdöl&sort=&strSearch=) F,  [Ademoğlu](http://www.nobeltip.com/tr/products.asp?ID=22&AID=25127&title=%20Prof.Dr.%20Evin%20Ademoğlu&sort=&strSearch=) E, (2010) **Biyokimya,** Nobel Tıp Kitapevi
 |
| **REFERENCES** |   |

|  |  |
| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Structure and Functions of the kidney |
| 2 |  | Glomerular Filtration Rate and Glomerular fitrat |
| 3 |  | Function and Regulation of tubule |
| 4 |  | Clearance Concept and Clearance Testing, Calculation |
| 5 |  | Creatine Synthesis and Metabolism |
| 6 |  | Urea Synthesis and its Metabolism in kidney |
| 7 |  | Uric Acid Synthesis and its Metabolism in kidney |
| 8 |  | Midterm Exam |
| 9 |  | Homeostasis of Water |
| 10 |  | Stone Formation Metabolism in the Urinary System  |
| 11 |  | Physical Properties of urine |
| 12 |  | Chemical Properties of urine |
| 13 |  | Acute Renal Failure |
| 14 |  | Chronic Renal Failure |
| 15 |  | Final Exam |
| 16 |  |  |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  **X** |  |  |
| 2 | ask scientific questions and form hypothesis |  | **X** |  |
| 3 | search and interpret scientific literature |  |  **X** |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  | **X**  |
| 5 | learn how to use the experimental equipment effectively |  | **X**  |  |
| 6 | function on multi-disciplinary teams | **X** |  |  |
| 7 | identify, formulate, and solve medical problems | **X**  |  |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X**  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X**  |  |
| 10 | use effective written and oral communication/presentation skills | **X** |  |  |
| 11 | get an understanding of professional and ethical responsibility | **X**  |  |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | **X** |  |  |

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| **Instructor Name****Sign**Prof.Dr. İ.Özkan ALATAŞ | **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

 **DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:**  | **521404207** | **DEPARTMENT:** MEDICAL BIOCHEMISTRY |
| **COURSE NAME:** | INTRODUCTION TO BIOCHEMSTRY II |  |
| **INSTRUCTOR NAME**Prof.Dr. Sema USLU | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
|  |  |  | **X** |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
| **** | **X** |  | **** |

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| --- | --- | --- |
|  **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Spring **X**Autumn **** |  3 |  - |  - |  3 | 7,5 | COMPULSORY ELECTIVE **X**  |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  |  %50 |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Other(……………….) | **1** | **%50** |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** |  This course examines molecular structures, metabolism and synthesis of carbohydrates, lipids, vitamines and minerals |
| **COURSE AIMS** |  To discuss, structures, metabolisms, functions and biosynthesis of carbohydrates, l,ipids, and regulatory roles of vitamines and minerals |
| **COURSE OBJECTIVES** |   |
| **TEXTBOOK(S)** |  Lecture notes |
| **REFERENCES** |  Nelson DL. and Cox MM.. 2005. Lehninger Principles of. Biochemistry. Fourth Edition. Harper’ Biochemistry |

|  |  |
| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | Classification of carbohydrates. Monosaccharides |
| 2 |  | Disaccharides and polysaccaharides |
| 3 |  | Glycolysis and the catabolism of hexoses  |
| 4 |  | Pyruvate metabolism |
| 5 |  | The Citric acid cycle and HMP pathway |
| 6 |  | Gluconeogenesis and glukogenesis |
| 7 |  | Classification of lipids and fatty acids |
| 8 |  | Lipoproteins and lipoprotein metabolism |
| 9 |  | 1st Mid-Term |
| 10 |  | Oxidation of fatty acids |
| 11 |  | Lipid biosynthesis (Fatty acids, cholesterol, triacylglycerols) |
| 12 |  | Water -soluble vitamines |
| 13 |  | Fat-soluble vitamines |
| 14 |  | Metabolism and biofunctions of macroelements |
| 15 |  | Metabolism and biofunctions of microelements |
| 16 |  | Integration and hormonal regulation of mammalian metabolism |

**PROGRAM QUTCOMES**

Place choose never(1), few(2) or many(3) regarding your course

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** |  | **1** | **2** | **3** |
| 1 | gather as well as apply knowledge of health sciences |  |  **X** |  |
| 2 | ask scientific questions and form hypothesis |  |  | **X** |
| 3 | search and interpret scientific literature | **X** |  |  |
| 4 | design and conduct experiments as well as analyze and interpret the data |  |  **X** |  |
| 5 | learn how to use the experimental equipment effectively | **X** |  |  |
| 6 | function on multi-disciplinary teams |  | **X** |  |
| 7 | identify, formulate, and solve medical problems |  | **X** |  |
| 8 | use computer effectively both in conducting the experiments and analyzing the data | **X** |  |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills |  | **X** |  |
| 11 | get an understanding of professional and ethical responsibility |  | **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning | **X** |  |  |

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| --- | --- |
| **Instructor Name****Sign**Prof.Dr.Sema USLU |  **Date** |

** ESOGU INSTITUTE OF HEALTH SCIENCE**

**DEPARTMENT OF MEDICAL BIOCHEMISTRY**

 **COURSE INFORMATION FORM**

|  |  |  |
| --- | --- | --- |
| **COURSE CODE:** | **521404208** | **DEPARTMENT: MEDICAL BIOCHEMISTRY** |
| **COURSE NAME:** | **METABOLIC PATHWAYS AND BIOSYNTESIS II** |  |
| **INSTRUCTOR NAME** | **COURSE LANGUAGE****Turkish: X****English:**  | **Course Catagory** |
| Technical | Medical | Other(……) |
| **Prof. Dr. Sema USLU** |  |  | **X** |  |
|  |  |  |  |  |  |  |

**COURSE LEVEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROPAEDEUTIC** | **M.SC.** | **Ph.D.** | **COURSE OF PROVINCE** |
|  | **X** |  |  |

|  |  |  |
| --- | --- | --- |
| **SEMESTER** | **WEEKLY COURSE PERIOD** | **COURSE OF** |
| **Theoric** | **Practice** | **Laboratory** | **Credit** | **ECTS** | **TYPE** |
| Autumn Spring **X** |  2 |  0 |   | 2 | 7,5 | COMPULSORY ELECTIVE **X** |
|  |
| **ASSESMENT CRITERIA** |
| **MID-TERM** | **ACTIVITY** | **Quantity** | **Percentage (%)** |
| 1st Mid-Term | 1  | 50  |
| 2 nd Mid- Term |   |   |
| Quiz |  |   |
| Homework |   |   |
| Project |   |   |
| Oral Exam |  |  |
| Other (………) |  |  |
| **FINAL** | Quiz |  |  |
| Homework |  |  |
| Project |  |  |
| Oral Exam |  |  |
| Final | 1 | 50 |
| **MAKE-UP EXAM** | Oral | Written | Oral and Written | Multiple Choice |
|  |  |  |  |
| **PREREQUISITE(S)** |   |
| **COURSE CONTENT** | Students will be informed that metabolism of citric acid cycle, glycolysis, glycogen metabolism, gluconeogenesis, pentose phosphate pathway, metabolism of other hexoses, glycosaminoglycans, biosynthesis of proteoglycans, oxidation of fatty acids, biosynthesis of fatty acids and eicosanoids, metabolism of acylglycerol and sphingolipids,transport and storage of lipids, biochemical pathways such as cholesterol biosynthesis and the relationship of metabolisms in fasting and satiety |
| **COURSE AIMS** |  To examine carbohydrate and lipid metabolisms and biosynthesis at tissue, organ and cell at the molecular level |
| **COURSE OBJECTIVES** |  1- To know the reactions of metabolic and biosynthesis pathways 2- To be able to explain the regulation of metabolites flow in metabolic biosynthetic pathways 3- To be able to discuss how metabolic fuels are provided in hunger and toughness situations  |
| **TEXTBOOK(S)** |  Murray R.K, Bander D.A, Botham K.M, Kennelly P.J, Rodwell V.W, Weil P.A. Harper’in Biyokimyası. Yirmidokuzuncu baskı. Çev.Ed: Akdoğan G.G, Ersöz B, Turgan N. Nobel tıp Kitapevi, 2015. |
| **REFERENCES** |  Nelson DL, Cox MM. Lehninger Biyokimyanın İlkeleri. 5.Baskı. Çeviri Ed:Elçin MY. Palme Yayıncılık, Ankara, 2013. |

|  |  |
| --- | --- |
|  |  **COURSE SYLLABUS** |
| **WEEK** |  **DATE** | **SUBJECTS/TOPICS** |
| 1 |  | A glance at metabolism and the provision of metabolic fuels |
| 2 |  | Citric acid cycle: Metabolism of acetyl-CoA |
| 3 |  | Oxidation of glycolysis and pyruvate |
| 4 |  | Glycogen metabolism |
| 5 |  | Gluconeogenesis and control of blood glucose |
| 6 |  | Pentose phosphate pathway and other ways of hexose metabolism |
| 7 |  | Biosynthesis of glycosaminoglycans, proteoglycans |
| 8 |  | MIDTERM |
| 9 |  | Oxidation of Fatty Acids: Ketogenesis |
| 10 |  | Biosynthesis of fatty acids |
| 11 |  | Biosynthesis of eicosonoids |
| 12 |  | Metabolism of acylglycerol and sphingolipids |
| 13 |  | Transport and storage of lipids |
| 14 |  | Cholesterol biosynthesis |
| 15 |  | Metabolism in fasting and toughness |
| 16 |  | FINAL |

**PROGRAM QUTCOMES**

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| --- | --- | --- | --- | --- |
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| 4 | design and conduct experiments as well as analyze and interpret the data | **X** |  |  |
| 5 | learn how to use the experimental equipment effectively | **X** |  |  |
| 6 | function on multi-disciplinary teams |  |  | **X** |
| 7 | identify, formulate, and solve medical problems |  |  | **X** |
| 8 | use computer effectively both in conducting the experiments and analyzing the data |  | **X** |  |
| 9 | understand the impact of experimental solutions on national and international sciences |  | **X** |  |
| 10 | use effective written and oral communication/presentation skills |  | **X** |  |
| 11 | get an understanding of professional and ethical responsibility |  | **X** |  |
| 12 | get a recognition of the need for, and an ability to engage in lifelong learning |  | **X** |  |
| 13 | other (……………………………………….)  |  |  |  |
| 14 | other (……………………………………….) |  |  |  |

|  |  |
| --- | --- |
| **Instructor Name****Sign****Prof. Dr. Sema USLU** |  **Date**18/11/2016 |