

Ministry of Higher Education and Scientific research



**Department of Medical Laboratory Technology**

**College of Erbil Technical Health & Medical College**

**Subject: Endocrinology**

**Course Book – (3rd stage)**

**Lecturer's name: Dr. Zhwan Mohammed Ismail, PhD**

**Academic Year: 2023/2024**

<b>1. Course Title</b>	<b>Endocrinology</b>
<b>2. Lecturer in charge</b>	<b>Zjwan Mohammed Ismail Housein</b>
<b>3. Department/ College</b>	<b>Medical Laboratory Technology/Erbil Technical Health &amp; Medical College</b>
<b>4. Contact e-mail</b>	<b>zjwan.h@epu.edu.iq</b>
<b>5. Time Hours/ week</b>	<b>Theory: 2 hours Practical: 8 hours (4 groups)</b>
<b>Prerequisites</b>	<b>Human physiology</b>
<b>6. contact days</b>	<b>Sunday-Monday-Wednesday-Thursday</b>
<b>7. Course code</b>	<b>END505</b>
<b>8. Teacher's academic profile</b>	<p>RECEIVED degrees:</p> <ul style="list-style-type: none"> <li>- 2007_Bachelor in applied Science/Molecular biology: Utrecht University, The Netherlands.</li> <li>-2010_Master in Biomedical Science/Pathobiology: Radboud University, The Netherlands</li> <li>- 2010_Master in Biomedical Science/Toxicology: Imperial College of London University</li> </ul> <p>Academic work experienter</p> <ul style="list-style-type: none"> <li>-Teaching different subject such us hematology, Physiology, Endocrinology, human biology and histology</li> <li>-Head of department at Shaqlawa technical institute for 2 years.</li> </ul> <p>Publication:</p> <p>Many published articles, including papers in high impact factor journals</p>
<b>9. Keyword</b>	Hypothalamus, Pituitary glands, endocrine glands (Thyroid gland, Parathyroid gland, growth hormone, oxytocin, ADH, adrenal gland hormones, ) homeostasis , endocrine disorder
<b>10. Course overview/ Description:</b>	This course describes the study of endocrine hormones and of the organs involved in endocrine hormone release, this science also deals with the biosynthesis, chemistry and storage of hormones, the factors and mechanisms controlling hormonal secretion, the cellular mechanisms of hormone action, and the pathophysiology of endocrine system dysfunction
<b>11. Course Objective</b>	This is an introductory course which can provide the student with some basic knowledge on endocrine glands and their secretions.
<b>12. Intended Learning</b>	Upon successful completion of this course students will be able to learn about:

<b>13. Outcomes (ILOs):</b>	<ol style="list-style-type: none"> <li>1. Hypothalamus and Pituitary glands</li> <li>2. The endocrine glands and their hormones.</li> <li>3. The biosynthesis, chemistry, and storage of the hormones.</li> <li>4. The factors and mechanisms controlling hormonal secretion, and the cellular mechanisms of hormone action.</li> <li>5. The pathophysiology of endocrine system dysfunction.</li> </ol>
<b>14. Student's obligation</b>	<p>Students must read the given materials as well as sources provided for them ahead of the lecture. They are asked to be well prepared throughout the lecture. They are needed to participate as much as they can, and must form groups to discuss topics have been taught in previous lectures or/ and they study every lecture. There are seminars, quizzes, reports, term exams to finalize their understandings for the subjects they have been taught throughout the course.</p>
<b>15. Forms of teaching</b>	<ul style="list-style-type: none"> <li>➤ Data show and power point</li> <li>➤ Scientific videos</li> <li>➤ Seminars</li> <li>➤ Groups discussion</li> <li>➤ Reports</li> <li>➤ Homework assignments</li> </ul>
<b>16. Student learning outcome:</b>	<p>On successful completion of this course, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. Describe the fundamental molecular principles of genetics</li> <li>2. Understand the structure and function of DNA, RNA and protein</li> <li>3. Explain the way in which genes code for proteins</li> <li>4. Understand the relationship between phenotype and genotype in human genetic traits.</li> <li>5. Describe the basics of genetic mapping</li> <li>6. Understand how gene expression is regulated</li> <li>7. Understand the genetic basis of cancer</li> <li>8. Comprehensive, detailed understanding of the chemical basis of heredity</li> <li>9. Comprehensive and detailed understanding of genetic methodology and how quantification of heritable traits in families and populations provides insight into cellular and molecular mechanisms.</li> <li>10. Understanding of how genetic concepts affect broad societal issues including health and disease, food and natural resources, environmental sustainability, etc. Understanding the role of genetic mechanisms in evolution.</li> <li>11. The knowledge required to design, execute, and analyze the results of genetic experimentation in animal and plant model systems.</li> </ol>
<b>17. Course Reading List and</b>	<b>Greenspan's Basic and Clinical Endocrinology, Tenth Edition</b> by David Gardner; Dolores Shoback

<p><b>References</b></p>	<p>ISBN: 9781259589287  <b>Harrison's Endocrinology</b> by J. Larry Jameson  Call Number: Reserve WK 140 H323 2017  ISBN: 9781259835728  <b>Williams Textbook of Endocrinology</b> by Shlomo Melmed; Ronald Koenig; Clifford Rosen; Richard Auchus; Allison Goldfine  ISBN: 9780323555968</p>
<p><b>18. Examinations:</b></p>	<p>Q1) describe the feedback mechanism of growth hormone  Q2) write in details about the synthesis of thyroid hormone  Q3) Choose the best answer  - Which gland doesn't belong to endocrine system?  a) Pituitary gland   b) Pancreases gland   c) Sweat glands  d) Thyroid gland   e) pineal gland.  Q4) Explain the working mechanism of Steroid hormone</p>
<p><b>19. Peer review</b></p>	<p style="text-align: center;"><b>پیداچوونہوہی ہاوہل</b></p> <p>This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.  <i>(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).</i></p> <p>ئہم کورسبوو کہ دہبیت لہ لایہن ہاوملئیکی ئەکادیمیہوہ سہیر بکریت و ناومرۆکی بابہتہکانی کورسہکە پەسەند بکات و جەند ووشەبەک بنووسیت لەسەر شیاوی ناومرۆکی کورسەکە و واژووی لەسەر بکات.  ہاوہل ئەو کەسەبە کە زانیاری ھەبیت لەسەر کورسەکە و دہبیت پلہی زانستی لہ ماموستا کەمتر نەبیت.</p>

**20. The Topics:**

Week	Theory Lecture Topics	Lecturer's name
		Dr. Zhwan Mohammad Ismail Housein
1	Introduction Endocrinology	7/9/2022 2 hours
2	Hormone course, function and and hormone glands	14/9/2022 2 hours
3	Chemical structure and synthesis and mechanism of action	21/9/2022 2 hours
4	The hypothalamus and the anterior pituitary gland.	28/9/2022 2 hours
5	Posterior pituitary gland: oxytocin and ADH	5/10/2022 2 hours
6	Growth hormone feedback mechanism and regulation	12/10/2022 2 hours
7	Thyroid gland feedback mechanism	19/10/2022 2 hours
8	Thyroid hormone synthesis	26/10/2022 2 hours
9	Parathyroid gland and calcium homeostasis	2/11/2022 2 hours
10	Exam midterm (10%)	6/11/2022
11	Adrenal cortex and Adrenal medulla gland	9/11/2022 2 hours
12	Pancreas and diabetes mellitus	16/11/2022 2 hours
13	Gonads Female sex hormones	23/11/2020 2 hours
14	Gonads Male sex hormones	30/11/2020 2 hours
15	Endocrinology during pregnancy	7/12/2020 2 hours
16	Endocrine related diseases	14/12/2020 2 hours
17	Melanocytes	21/12/2020 2 hours

<b>17. The Topics:</b>		
<b>Week</b>	<b>Practical Lecture Topics</b>	<b>Lecturer's name</b>
		Mamosta Hawro
1	Hypothalamus and pituitary Physiology	Mamosta Hawro
2	Acromegaly	Mamosta Hawro
3	Role of PTH in hypercalcemia and calcium homeostasis	Mamosta Hawro
4	Thyroid hormone	Mamosta Hawro
5	Hyperthyroidism and Thyrotoxicosis	Mamosta Hawro
6	Graves' disease	Mamosta Hawro
7	Cushing syndrome	Mamosta Hawro
8	Adison disease	Mamosta Hawro
9	Mid term exam	Mamosta Hawro
10	Endocrine disease case 1	Mamosta Hawro
11	Endocrine disease case 2	Mamosta Hawro
12	Endocrine disease case 3	Mamosta Hawro
13	Endocrine disease case 4	Mamosta Hawro
14	Endocrine disease case 5	Mamosta Hawro
15	Endocrine disease case 6	Mamosta Hawro

