SYLLABUS

Name:
Name in Polish: ***Praktyczna interpretacja testów fizjologicznych (1655-Lek22WYBTES-J)***
Name in English: ***Practical Interpretation of Physiological Tests***

Information on course:

Course offered by department: Department of Human Physiology
Course for department: Faculty of Medicine
Term: Summer semester 2023/24
Cordinator of course edition: prof. dr hab. Małgorzata Tafil-Klawe

Default type of course examination report:
Pass/Fail
Language:
English
Short description:
The Interpretation of physiological tests tutorials are strongly related to Human Physiology course. In the first part of tutorials Student learns and performs basic auditory system testing methods. Next, Student extents the knowledge about ECG and the ECG recording changes during exercise and in some pathophysiological conditions. Other methods assessing cardiovascular system functional state are discussed as well (volume-pressure loop validation). Functional movement screen methods are introduced to Student to evaluate the musculature and the risk of injury.
Description:
During "Physiological tests interpretations" tutorials Student learns about and performs basic physiological tests evaluating human body functional state. Particular emphasis is placed on the cardiovascular system, acoustic system as well as musculature. Stress tests (exercise tests) results interpretation allows to determine the effect of different types of exercise on cardiovascular system parameters (HR, ECG recoding, volume-pressure loop). To assess the impact of exercise on musculature and screen individuals for risk of injury and / or a dysfunctional or performance-limiting movement pattern Students learns Functional Movement Screen testing. The ECG recording analyse and interpretation concerns chosen pathophysiological conditions as well. Since the assessment of auditory functions is crucial in the differentiation of nervous, auditory and balance system disorders Student is introduced with basic methods of auditory system evaluation methods.
Bibliography:
Primary literature:
1. Klaubunde R, Cardiovascular system physiology concepts, Wolters Kluwer, 2021
2. Raff H, Levitzky M, Medical Physiology: A Systems Approach,Lange McGraw-Hill, 2011
3. Guyton AC, Hall JE: The Textbook of Medical Physiology, Elsevier Saunders, 2006
Assessment methods and assessment criteria:
In order to obtain the credit from In order to obtain the credit from The interpretation of Physiological tests course in a given semester Student must participate in all tutorials and obtain credited from all tutorials, lab reports, entrance tests and mid-term tests. Positive assessment of social competes is also required.
Written semi-final tests (≥60 %): W1-W7, U1-U8
Lab reports/ work sheets (≥60 %): W5, U2-U4, U6- U8
Observation: (≥60 %): K1
Student obtain the credit form the course after receiving positive outcomes from the tutorials and social competences.

Total student workload

1. Study hours involving teacher participation:
- tutorials: 15 hours
- consultancies: 1 hour
- obtaining credits from the tutorials- 1 hour
Total workload involving student and teacher participation is 17 hours, which is 0,68 ECTS

2. Student's workload balance:
- tutorials participation: 15 hours
- preparation for the tutorials: 2 hours
- preparation of the lab reports or worksheets: 5 hours
- reading topic- related literature- 2 hours
- consultations: 1 hour
- preparation for tests and takin the tests: 3+1=4 hours
Total student's workload is 30 hours, which is 1,2 ECTS

3. Student's workload balance due to scientific activity:
- reading topic- related literature:25 hours
- consultations: 1 hours
- participation in the tutorials covering scientific activity (including survey methodology, experimental data, treatise): 15 hours
- preparation for tutorials covering scientific activity: 2 hours
- preparation of the lab reports or worksheets from the tutorials covering scientific activity: 5 hours
- preparation for tests: 1 hour
Total workload involving preparation for the evaluation process is 27 hours, which is 1,08 ECTS

4. Time required for preparation and participation in the evaluation:
- preparation of the lab reports or worksheets from the tutorials covering scientific activity: 5 hours
- preparation for tests and taking the tests: 3+1=4 hours
Total student's active workload is 9 hours, which is 036 ECTS

5. Student's practical workload balance:
- participation in the tutorials: 15 hours
Total student's active workload is 15 hours, which is 0,6 ECTS

6. Time required for obligatory practice:
not applicable

Learning outcomes - knowledge

W1: Has the extended knowledge of organic, functional and metabolic changes that shape homeostasis in the body based on scientific literature (B.W20, B.W21)
W2: Knows and understands the basic concepts and principles of the homeostasis and adaptation process (B.W20, B.W21)
W3: Has basic knowledge of organic, functional and metabolic changes after exercise in people with cardiovascular and metabolic disorders (B.W21, BW24)
W4. Knows and understands electrophysiology of the heart muscle (B.W21)
W5. Analyzes and interprets ECG recording associated with physiological and pathophysiological conditions (B.W21, BW24)
W6. Knows human auditory electrophysiology (B.W20)
W7. Has knowledge about the muscular system including muscle fibre types (B.W20)

Learning outcomes - skills

U1. Can perform and interpret the experimental date obtained from simple experimental procedures evaluating cardiovascular and respiratory system response to exercise (B.U7, C.U20)
U2. Based on conducted experimental procedure can conclude about compensatory mechanisms triggered by exercise (C.U20)
U3: Can analyze and interpret ECG recording (B.U7)
U4. Can assess the auditory functions (B.U7)
U5. Describes the impact of exercise on the human body including intergraded cardiovascular and respiratory system response (C.U20)
U6. Performs functional movement screen tests and can predict the risk of injury and / or a dysfunctional or performance-limiting movement pattern (C.U20)
U7. Knows and can recognize elements of ECG recording (C.U20)
U8. Based on ECG recording can evaluate heart activity after exercise and in pathophysiological conditions (C.U20)

Learning outcomes - social competencies

K1: Understands educational needs, especially with regard to new methods evaluating human body activity(K.K07)

Teaching methods

Tutorials: laboratory, observation, classical problem - based classes, discussion, presentation, case study, decision tree, expository teaching methods- presentation, movie

Exploratory teaching methods

- practical

- classic problem-solving

- laboratory

- seminar

Prerequisites
In order to obtain the credit from The interpretation of Physiological tests course in a given semester Student must participate in all tutorials and obtain credited from all tutorials, lab reports, entrance tests and mid-term tests. Positive assessment of social competes is also required. Written semi-final tests (≥60 %): W1-W7, U1-U8 Lab reports/ work sheets (≥60 %): W5, U2-U4, U6- U8 Observation: (≥60 %): K1 Student obtain the credit form the course after receiving positive outcomes from the tutorials and social competences.

Information on course edition:

Default type of course examination report:
Pass/Fail

Short description:
The Interpretation of physiological tests tutorials are strongly related to Human Physiology course. In the first part of tutorials Student learns and performs basic auditory system testing methods. Next, Student extents the knowledge about ECG and the ECG recording changes during exercise and in some pathophysiological conditions. Other methods assessing cardiovascular system functional state are discussed as well (volume-pressure loop validation). Functional movement screen methods are introduced to Student to evaluate the musculature and the risk of injury.

Description:
During "Physiological tests interpretations" tutorials Student learns about and performs basic physiological tests evaluating human body functional state. Particular emphasis is placed on the cardiovascular system, acoustic system as well as musculature. Stress tests (exercise tests) results interpretation allows to determine the effect of different types of exercise on cardiovascular system parameters (HR, ECG recoding, volume-pressure loop). To assess the impact of exercise on musculature and screen individuals for risk of injury and / or a dysfunctional or performance-limiting movement pattern Students learns Functional Movement Screen testing. The ECG recording analyse and interpretation concerns chosen pathophysiological conditions as well. Since the assessment of auditory functions is crucial in the differentiation of nervous, auditory and balance system disorders Student is introduced with basic methods of auditory system evaluation methods.

Notes:
In order to obtain the credit from In order to obtain the credit from The interpretation of Physiological tests course in a given semester Student must participate in all tutorials and obtain credited from all tutorials, lab reports, entrance tests and mid-term tests. Positive assessment of social competes is also required. Written semi-final tests (≥60 %): W1-W7, U1-U8 Lab reports/ work sheets (≥60 %): W5, U2-U4, U6- U8 Observation: (≥60 %): K1 Student obtain the credit form the course after receiving positive outcomes from the tutorials and social competences.

Details of classes and study groups

Tutorial (15 hours)

Bibliography:
Primary literature: 1. Klaubunde R, Cardiovascular system physiology concepts, Wolters Kluwer, 2021 2. Raff H, Levitzky M, Medical Physiology: A Systems Approach,Lange McGraw-Hill, 2011 3. Guyton AC, Hall JE: The Textbook of Medical Physiology, Elsevier Saunders, 2006

Learning outcomes:
W1: Has the extended knowledge of organic, functional and metabolic changes that shape homeostasis in the body based on scientific literature (B.W20, B.W21) W2: Knows and understands the basic concepts and principles of the homeostasis and adaptation process (B.W20, B.W21) W3: Has basic knowledge of organic, functional and metabolic changes after exercise in people with cardiovascular and metabolic disorders (B.W21, BW24) W4. Knows and understands electrophysiology of the heart muscle (B.W21) W5. Analyzes and interprets ECG recording associated with physiological and pathophysiological conditions (B.W21, BW24) W6. Knows human auditory electrophysiology (B.W20) W7. Has knowledge about the muscular system including muscle fibre types (B.W20) U1. Can perform and interpret the experimental date obtained from simple experimental procedures evaluating cardiovascular and respiratory system response to exercise (B.U7, C.U20) U2. Based on conducted experimental procedure can conclude about compensatory mechanisms triggered by exercise (C.U20) U3: Can analyze and interpret ECG recording (B.U7) U4. Can assess the auditory functions (B.U7) U5. Describes the impact of exercise on the human body including intergraded cardiovascular and respiratory system response (C.U20) U6. Performs functional movement screen tests and can predict the risk of injury and / or a dysfunctional or performance-limiting movement pattern (C.U20) U7. Knows and can recognize elements of ECG recording (C.U20) U8. Based on ECG recording can evaluate heart activity after exercise and in pathophysiological conditions (C.U20) K1: Understands educational needs, especially with regard to new methods evaluating human body activity(K.K07)

Classes topics:
1. Otoacoustic emissions. Electrophysiology of the human auditory system 2. Hearing examination 3. Functional fitness test - an important tool for athletes 4. Assessment of the autonomic nervous system's influence on cardiovascular function 5. Interpretation of EKG recordings in selected pathophysiological states

Teaching methods:
Laboratory exercises:

- laboratory
- observation
- problem-based classical method
- discussion
- demonstration

Study groups details

Group number 1

Class instructors:
dr Wieńczysława Adamczyk
prof. dr hab. Wojciech Kaźmierczak
dr Monika Zawadka-Kunikowska

Group number 2

Class instructors:
dr Wieńczysława Adamczyk
prof. dr hab. Wojciech Kaźmierczak
dr Monika Zawadka-Kunikowska

Element of course groups in various terms:

Course group description	First term	Last term
missing group description in English (16550147-22-F)	2022/23	
All university courses (0000-ALL)	2022/23	

Course credits in various terms:

<without a specific program>			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	1,2	2022/23	