



Pomorski Uniwersytet Medyczny w Szczecinie

SYLLABUS of the MODULE (SUBJECT) General Information

Module title: Biomarkers of nutrition, malnutrition and wasting diseases	
Module type	Facultative
Faculty PMU	Faculty of Dentistry
Major	Dentistry
Level of study	long-cycle (S2J)
Mode of study	full-time studies
Year of studies, semester	Year 2, semester IV
ECTS credits (incl. semester breakdown)	2
Type/s of training	lectures (25 h)
Form of assessment*	<input checked="" type="checkbox"/> graded assessment: <input type="checkbox"/> descriptive <input checked="" type="checkbox"/> test <input checked="" type="checkbox"/> practical <input type="checkbox"/> oral <input type="checkbox"/> non-graded assessment <input type="checkbox"/> final examination <input type="checkbox"/> descriptive <input type="checkbox"/> test <input type="checkbox"/> practical <input type="checkbox"/> oral
Head of the Department/ Clinic, Unit	Prof. dr hab. n.med. i n. zdr. Małgorzata Szczuko Department of Bromatology and Nutritional Diagnostics PUM Powstańców Wlkp. 72 Av; MCD1 building; 1st floor; room 111; Tel. 914661644; bdz@pum.edu.pl
Tutor responsible for the module	Prof. dr hab. n.med. i n. zdr. Małgorzata Szczuko Malgorzata.szczuko@pum.edu.pl
Department's/ Clinic's/ Unit's website	www.pum.edu.pl/studia_iii_stopnia/ informacje_z_jednostek/wfbmiml/
Language	English

* replace into where applicable

Detailed information

Module objectives		This course aims to familiarize students with modern methods for assessing nutritional status based on biochemical, anthropometric, and functional biomarkers. Laboratory indicators and their diagnostic significance in diagnosing malnutrition, overweight, micronutrient and macronutrient deficiencies, as well as monitoring the effectiveness of nutritional interventions, are discussed.
Prerequisite /essential requirements	Knowledge	Knowledge of the principles of rational nutrition for a healthy individual
	Skills	The ability to critically consider the elimination of certain foods from the diet
	Competences	The habit of self-education and the need for lifelong learning

Description of the learning outcomes for the subject /module			
No. of learning outcome	Student, who has passed the (subject) knows /is able to /can:	SYMBOL (referring the standards)	Method of verification of learning outcomes*
W01	Knows and understands development of organs and entire body with particular regard to masticatory system	A.W2	K
W02	Knows and understands functional importance of certain organs and systems in synthetic manner	A.W5	K
W03	knows and understands structure and functions of significant chemical compounds found in human body. In particular properties , functions, metabolism and energy aspects of proteins, nucleic acids, carbohydrates, lipids, enzymes and hormones reactions.	B.W4	K
W04	Knows and understands human vital functions	B.W17	K/R
W05	Impact of oxidative stress in case of cells and its meaning in pathogenesis of diseases and the process of body ageing	C.W9	K/R
W06	knows and understands the impact on the human organism of physical factors, chemical factors and biological factors as well as of avitaminosis and stress	E.W3	K/R
W07	knows and understands the impact of nutrition and use of alcohol and other psycho active substances by a pregnant woman on the growth of foetus	E.W.18	K/R
K01	is ready to be guided by the patient wellbeing	K.2	O/S
K02	is ready to notice and recognize own limitations, make self-assessment of educational deficits and needs	K.5	O/S

Table presenting LEARNING OUTCOMES in relation to the form of classes		
	Learning outcomes	Type of training

No. of learning outcome		Lecture	Seminar	Practical	Clinical classes	Simulations	E-learning	Other...
W01	Knows and understands development of organs and entire body with particular regard to masticatory system	X						
W02	Knows and understands functional importance of certain organs and systems in synthetic manner	X						
W03	knows and understands structure and functions of significant chemical compounds found in human body. In particular properties , functions, metabolism and energy aspects of proteins, nucleic acids, carbohydrates, lipids, enzymes and hormones reactions.	X						
W04	Knows and understands human vital functions	X						
W05	Impact of oxidative stress in case of cells and its meaning in pathogenesis of diseases and the process of body ageing	X						
W06	knows and understands the impact on the human organism of physical factors, chemical factors and biological factors as well as of avitaminosis and stress	X						
W07	knows and understands the impact of nutrition and use of alcohol and other psycho active substances by a pregnant woman on the growth of fetus	X						
K01	is ready to be guided by the patient wellbeing	X						
K02	is ready to notice and recognize own limitations, make self-assessment of educational deficits and needs	X						

Table presenting TEACHING PROGRAMME			
No. of a teaching programme	Teaching programme	No. of hours	References to learning outcomes
Summer semester			
Lectures			
TK01	Introduction to Nutritional Status Biomarkers – Definitions and Classification	2	W01, W02, W03
TK02	Anthropometric Indicators of Nutritional Status in Adults – BMI, Circumferences, Skinfolds	3	W03
TK03	Anthropometric Indicators of Nutritional Status in Children – Percentile Charts	2	W03
TK04	The Role of Biomarkers in the Diagnosis of Malnutrition and Nutrition-Related Diseases	2	W03,W04,W05
TK05	Biochemical Protein Biomarkers:	1	W04,W05

TK06	Albumin, Prealbumin, Transferrin, CRP	2	W04,W05
TK07	Assessment of Vitamin and Mineral Levels	2	W04,W05,W06
TK08	Vitamin D, B12, Folic Acid, Calcium, Magnesium	2	W04,W05,W06
TK09	Lipid Biomarkers and Their Importance in Cardiovascular Risk Assessment	2	W04,W05,W06
TK10	Biomarkers of Malnutrition in Chronic Diseases (Cancer, Kidney Disease)	7	W04,W05,W06

Booklist
Obligatory literature:
1. Normy żywienia dla populacji Polski – NPZ; 2025r. pod red. Ewa Rychlik, Katarzyna Stoś, Agnieszka Woźniak, Hanna Mojska. chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://www.pzh.gov.pl/wp-content/uploads/2025/01/normy-02.01.pdf
2. Ciborowska H., Rudnicka A., Żywnienie zdrowego i chorego człowieka. PZWL 2021
3. Peckenpaugh. Podstawy żywienia i dieto-terapia. pod red. D. Gajewska. Elsevier wyd.I. 2012

Student's workload	
Form of student's activity (in-class participation; activeness, produce a report, etc.)	Student's workload [h]
	Tutor
Contact hours with the tutor	25
Time spent on preparation to seminars/ practical classes	
Time spent on reading recommended literature	5
Time spent on writing report/making project	20
Time spent on preparing to colloquium/ entry test	20
Time spent on preparing to exam	
Other	
Student's workload in total	70
ECTS credits for the subject (in total)	1
Remarks	
Choosing the Form of ECC Verification Depending on Group Size and Group Collaboration/Involvement	

* Selected examples of methods of assessment:

EP – written examination

EU – oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O – student's active participation and attitude assessment

SL – lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedia presentation

other...