Course description

Part 1

General information about the course	
1. Major of study: medicine	**2. Study level:** unified MSc **3. Form of study:** intramural
4. Year:	**5. Semester:**
6. Course name: Internal medicine SUB-I / general medicine/geriatrics	
7. Course status: required	

8. Course contents and assigned learning outcomes

1. Electrolytes disturbances
2. Metabolic acidosis
3. Dehydration
4. Overhydration

Learning outcomes / reference to learning outcomes indicated in the standards
For knowledge – student knows and understands: E.W7.9, E.W11, E.W40, E.W41
For skills student can do: E.U14., E.U16., E.U24.
For social competencies student is ready to
1) establishing and maintaining deep and respectful contact with the patient, and showing understanding of ideological and cultural differences;
2) guiding the patient's well-being;
3) compliance with medical confidentiality and patient's rights;
4) taking actions towards the patient based on ethical principles, with awareness social conditions and restrictions resulting from the disease;
5) perceiving and recognizing one's own limitations and self-assessment educational deficits and needs;
6) promoting health-promoting behavior;
7) using objective sources of information;
8) formulating conclusions from own measurements or observations;
9) implementation of the principles of professional camaraderie and cooperation in a team of specialists, including representatives of other medical professions, also in the environment multicultural and multinational;
10) formulating opinions on various aspects of professional activity;
11) assuming responsibility related to decisions taken under professional activity, including in terms of own and other people's safety.

9. Number of hours for the course	**42**
10. Number of ECTS points for the course ***for the whole block of internal medicine sub-I***	**9**

11. Methods of verification and evaluation of learning outcomes

Learning outcomes	Methods of verification	Methods of evaluation*
Knowledge	Grade credit - oral	*
Skills	Observation	*
Competencies	Observation	*

* The following evaluation system has been assumed:

Very good (5,0) – the assumed learning outcomes have been achieved and significantly exceed the required level
Better than good (4,5) – the assumed learning outcomes have been achieved and slightly exceed the required level
Good (4,0) – the assumed learning outcomes have been achieved at the required level

Better than satisfactory (3,5) – the assumed learning outcomes have been achieved at the average required level
Satisfactory (3,0) – the assumed learning outcomes have been achieved at the minimum required level
Unstatisfactory (2,0) – the assumed learning outcomes have not been achieved

Course description

Part 2

Other useful information about the course	
12. Name of Department, mailing address, e-mail: **Department of Internal Medicine and Metabolic Diseases** **40-653Katowice, ul. Ziołowa 45-47** **jdulawa@sum.edu.pl, metabol@gcm.pl**	
13. Name of the course coordinator: **Prof. dr hab. n. med. Jan Duława**	
14. Prerequisites for knowledge, skills and other competencies: The student is able to conduct a medical interview with an adult patient. The student is able to conduct a full and targeted physical examination of an adult patient.	

15. Number of students in groups	In accordance with the Senate Resolution
16. Study materials	https://www.sciencedirect.com/science/article/pii/B9780124077102000175 https://academic.oup.com/nutritionreviews/article/68/8/439/1841926 https://academic.oup.com/nutritionreviews/article/73/suppl_2/97/1930742 https://www.clinicalnutritionjournal.com/article/S0261-5614(13)00316-6/pdf https://www.intechopen.com/books/fluid-and-electrolyte-disorders/fluids-and-sodium-imbalance-clinical-implications
17. Location of classes	
18. Location and time for contact hours	Consultation hours of individual assistants are available at the secretary's office

19. Learning outcomes

Number of the course learning outcome	Course learning outcomes	Reference to learning outcomes indicated in the standards
P_W01 / C_K01	The student knows and understands the causes, symptoms, principles of diagnosis and therapeutic procedure in relation to water-electrolyte and acid-base disorders: states of dehydration, overhydration, electrolyte imbalance, acidosis and alkalosis;	E.W7.9
P_W02 / C_K02	The student knows and understands risks associated with the hospitalization of the elderly;	E.W11
P_W03/C_K03	The student knows and understands theoretical and practical basics of laboratory diagnostics	E.W40
P_W04/C_K04	The student knows and understands possibilities and limitations of emergency laboratory tests	E.W41

P_U01 / C_S01	Student can recognize states of immediate threat to life	E.U14.
P_U02 / C_S02	Student can plan diagnostic, therapeutic and preventive measures	E.U16.
P_U03 / C_S03	Student can interpret the results of laboratory tests and identify the reasons for deviations from standards	E.U24.

20. Forms and topics of classes	**Number of hours**
21.1. Lectures	**14**
The pathophysiology of fluid and electrolyte balance in the older adult surgical patient	**3**
Neurologic Complications of Electrolyte Disturbances	**3**
Hydration and chronic dieases	**3**
Acute and chronic effects of hydration status on health	**3**
Fluids and sodium imbalance	**2**
22.2. Seminars	**0**
23.3. Labs	**28**
Electrolytes disturbances – part I a. hypo- and hypernatremia – definition (acute and chronic, normal range), signs and symptoms, risk factors, treatment (acute and chronic phase) – drugs, doses, time of correction, outpatient and inpatient treatment, diet b. hypo- and hyperkaliemia - definition (normal range), signs and symptoms, ECG changes, risk factors, treatment (acute and chronic phase) – drugs, doses, time of correction, outpatient and inpatient treatment, diet, dialysis	**5**
Electrolytes disturbances – part II a. hypo- and hypercalcemia - definition (acute and chronic, normal range), signs and symptoms, ECG changes, risk factors, treatment (acute and chronic phase) – drugs, doses, time of correction, outpatient and inpatient treatment, diet b. hypo- and hyperphosphatemia - definition (normal range), signs and symptoms, risk factors, treatment – drugs, doses, time of correction, outpatient and inpatient treatment, diet, dialysis	**5**
Metabolic acidosis – definition, etiology a. lactic acidosis – definition, risk factors, sings and symptoms, diagnostic tests, treatment b. ketoacidosis - definition, risk factors, sings and symptoms, diagnostic tests, treatment c. acidosis after glycol and methanol poisoning - definition, risk factors, sings and symptoms, diagnostic tests, treatment d. acidosis in chronic kidney disease	**8**
Dehydration – hypotonic, isotonic, hypertonic – definition, risk factors, sign and symptoms, treatment	**5**
Overhydration - – hypotonic, isotonic, hypertonic – definition, risk factors, sign and symptoms, treatment	**5**

24. Readings

https://www.sciencedirect.com/science/article/pii/B9780124077102000175
https://academic.oup.com/nutritionreviews/article/68/8/439/1841926
https://academic.oup.com/nutritionreviews/article/73/suppl_2/97/1930742
https://www.clinicalnutritionjournal.com/article/S0261-5614(13)00316-6/pdf

https://www.intechopen.com/books/fluid-and-electrolyte-disorders/fluids-and-sodium-imbalance-clinical-implications

25. Detail evaluation criteria

In accordance with the recommendations of the inspection bodies
Completion of the course – student has achieved the assumed learning outcomes
Detail criteria for completion and evaluation of the course are specified in the course regulations