



DISCIPLINE SHEET

1. Data about the programme

1.1.	“CAROL DAVILA” UNIVERSITY OF MEDICINE AND PHARMACY
1.2.	FACULTY OF MEDICINE
1.3.	DEPARTMENT: Clinical Department I
1.4.	DISCIPLINE: Practical Ultrasonography in Cardiovascular Emergencies
1.5.	DOMAIN OF STUDY: HEALTH – Sectorally regulated within the European Union
1.6.	STUDY CYCLE: LICENCE
1.7.	STUDY PROGRAME: MEDICINE – ENGLISH MODULE

2. 2. Data about discipline

2.1.	Name of the discipline in the educational plan: Practical Ultrasonography in Cardiovascular Emergencies				
2.2.	Discipline code: DO III 11 S6M				
2.3.	Discipline type (FD/SD/CD): SD				
2.4.	Discipline regimen (MD/OPD/): OPT				
2.5.	The holder of the course activities: 1. S.L. Dr. Nechita Alexandru Cristian				
2.6.	The holder of the seminar activities : 1. S.L. Dr. Nechita Alexandru Cristian 2. Asist. Univ. Dr. Dumitrascu Alina Laura 3. Asist. Univ. Dr. Tiglea Isabela Andreea 4. Asist. Univ. Dr. Enache Vasilica 5. Asist. Univ. Dr Avram Rodica Lucia 6. Asist. Univ. Dr. Popescu Dan Cristian 7. Asist. Univ. Dr. Diaconu Mara				
2.7. Year of study	IV	2.8. Semester	VIII	2.9. Type of evaluation (E/C)	E

3. Total estimated time (hours/semester of didactic activity an self preparation/study

I. Academic training (teaching, practical application, assessment)						
3.1. Nr hours/week	2	From which:	3.2. lecture	1	3.3. seminary/ laboratory	1
3.4. Total hours of educational plan	14	From which:	3.5. lecture	7	3.6. seminary/ laboratory	7
Evaluation (nr. of hours) : 1 hour						
II. Self preparation/study						
Time allocation						hours
Study of course materials, textbooks, books, study of the recommended minimal bibliography						10
Additional research in the library, research through the internet						10
Performing specific activities for preparing projects, laboratories, elaborating reviews or other tasks						10

Specific preparation activities for projects, laboratory work, assignments, and reports	5
Tutoring	5
Other activities	6
3.7. Total individual study hours	46
3.9. Total hours per semester (3.4.+ 3.7.)	Not applicable 60 hours
3.10. Number of credits	2

4. Preconditions (where applicable)

4.1. of curriculum	Not applicable
4.2. of competences	Not applicable

5. Conditions (where applicable)

5.1. to conduct the lecture	Emergency Clinical Hospital "Sf. Pantelimon," Sos. Pantelimon 340–342, Sector 2, 6th floor, amphitheater, laptop, projector, interactive whiteboard
5.2. to conduct the seminar / laboratory	Equipped with the necessary apparatus for conducting practical activities.

6. Learning outcomes

Knowledge	Skills	Responsibility and autonomy
Basic notions of cardiovascular ultrasound techniques. Main sections and imaging windows. Presentation of major pathologies and recognition of key echographic findings in cardiovascular emergencies.	Integration of theoretical and practical notions of cardiovascular ultrasonography into medical training. Facilitating assimilation of diagnostic and therapeutic knowledge through ultrasonography.	Improving the student's training level to accelerate knowledge acquisition and application of ultrasound in practice, aimed at reducing cardiovascular morbidity and mortality.

7. Course objectives (aligned with the learning outcomes)

7.1. General objective	At the end of the course, the student must know the basic notions of cardiovascular ultrasound techniques.
7.2. Specific objective	At the end of the course, the student must identify sections and techniques specific to each cardiovascular emergency and the changes that occur.

8. Contents

8.1. Lecture	Teaching methods	Observations
Lecture 1: Principles of ultrasound generation, propagation, and processing	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h
Lecture 2: Main sections in cardiovascular ultrasonography	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h

Lecture 3: Evaluation of the patient with pulmonary thromboembolism	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h
Lecture 4: Evaluation of the patient with aortic syndrome	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h
Lecture 5: Evaluation of the patient with acute heart failure	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h
Lecture 6: Evaluation of the patient with acute peripheral arterial syndromes	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h
Lecture 7: Evaluation of the patient with acute coronary syndrome	Multimedia projector, PowerPoint, interactive whiteboard, laptop, amphitheater.	1h

Recent Bibliography :

1. *Textbook of Clinical Echocardiography*, 6th Edition, Catherine M. Otto
2. *Feigenbaum's Echocardiography*, 8th Edition, William F. Armstrong, Thomas Ryan
3. *Essentials of Echocardiography*, 2nd Edition – Carmen Gingham, Bogdan A. Popescu, Ruxandra Jurcut

8.2. Laboratory/ practical lesson	Teaching methods	Observations
1. Ultrasound machine commands. Effects on images. Basic sections	Practical demonstrations, ultrasound device.	1h
2. Methods of obtaining major flows	Practical demonstrations, ultrasound device.	1h
3. Assessing right heart overload. Dynamic evaluation. Estimation of residual pulmonary hypertension. Differential diagnosis with chronic PH.	Practical demonstrations, ultrasound device.	1h
4. Complete examination of the aorta. Limits, indications for transesophageal exam. Identification of coronary syndrome complications.	Practical demonstrations, ultrasound device.	1h
5. Evaluation of acute heart failure: LV performance measurement, cardiac output, filling pressures, clinical correlations .	Practical demonstrations, ultrasound device.	1h
6. Acute coronary syndrome: Echocardiographic changes due to acute ischemia, coronary circulation correlations, ultrasound role in STEMI evaluation (prehospital, ER, post-revascularization, discharge) .	Practical demonstrations, ultrasound device.	1h
7. Acute peripheral arterial syndrome: Arterial interrogation, flow assessment, arterial occlusion, critical ischemia, venous examination, thrombosis, post-thrombotic syndrome	Practical demonstrations, ultrasound device.	1h

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9. Evaluation

Activity type	9.1. Evaluation criteria	9.2. Evaluation methods	9.3. Percentage in the final grade
9.4. Lecture	Recognition of main echocardiographic and vascular ultrasound sections, identification of major high-risk pathologies, understanding of ultrasound device commands and settings, integration of images into clinical decision algorithms.	Written test with 30 single-choice questions	100%
9.5. Seminary/ practical activity	-	-	-
9.5.1. Individual project (if applicable)	-	-	-
9.6. Minimum performance standard			
Minimum passing grade: 5.			

Date of completion :
29.09.2025

Signature of the course holder:
I.S.L. Dr. Nechita Alexandru Cristian

Signature of the laboratory holder:

1. S.L. Dr. Nechita Alexandru Cristian
2. Asist. Univ. Dr. Dumitrascu Alina Laura
3. Asist. Univ. Dr. Tiglea Isabela Andreea
4. Asist. Univ. Dr. Enache Vasilica
5. Asist. Univ. Dr. Avram Rodica Lucia
6. Asist. Univ. Dr. Popescu Dan Cristian
7. Asist. Univ. Dr. Diaconu Mara

Date of approval by
the Department
Council:
16.09.2025

Signature of the Department Director
PROF. UNIV. DR. DINA ION