



Biostatistics and Medical Informatics

Tudor Călinici, Ph.D., Lecturer

"Iuliu Hațieganu" University of Medicine and Pharmacy, Cluj-Napoca
Department of Medical Informatics and Biostatistics



OUTLINE

- PRESENTATION
- OBJECTIVES
- UNIVERSITY & POLICY: RULES AND REGULATIONS
- ABOUT EXAM
- ABOUT ...



Tudor Călinici

- Faculty of Mathematics and Informatics – UBB Cluj Napoca
- Master degree in Medical Informatics and Biostatistics
- PhD –medical e-learning

- Contact:



tcalinici@umfcluj.ro



Courses

- 14 lectures
- 1 hour each
 - Introduction
 - 12 lectures
 - Review



GENERAL GOALS

- To help students to gain
 - basic information about information technologies with applications in medicine
 - basic methods of statistics in medical practice and research



Practical activities (PA)

- 7x2 PA
 - 10 PA's
 - Review, Exam example
 - Practical part of the exam



SKILLS

- Searching and accessing information using the Internet.
- Data communication using Microsoft PowerPoint and Microsoft Word.
- Collecting data; data management with Microsoft Excel.
- Statistical analysis with Microsoft Excel and Jamovi



• Timetable

WEEK 2 19–23 October 2026					
DAY	SUBJECT	ACTIVITIES	HOUR	GROUPS	LOCATION
	Biostatistics and medical informatics	course	11.00-13.00	1-3	Amphiteater
	Biostatistics and medical informatics	p.a.	14.00-17.00	2*	
	Biostatistics and medical informatics	p.a.	17.00-20.00	1*	
	Biostatistics and medical informatics	course	11.00-13.00	1-3	Amphiteater
	Biostatistics and medical informatics	p.a.	14.00-17.00	1*	Computer Lab
	Biostatistics and medical informatics	p.a.	17.00-20.00	2*	Computer Lab
	Biostatistics and medical informatics	course	11.00-13.00	1-3	Amphiteater
	Biostatistics and medical informatics	p.a.	14.00-17.00	2*	Computer Lab
	Biostatistics and medical informatics	p.a.	17.00-20.00	1*	Computer Lab
	Biostatistics and medical informatics	course	11.00-13.00	1-3	Amphiteater
	Biostatistics and medical informatics	p.a.	14.00-17.00	1*	Computer Lab
	Biostatistics and medical informatics	p.a.	17.00-20.00	2*	Computer Lab
	Biostatistics and medical informatics	p.a.	8.00-11.00	1*	Computer Lab
	Biostatistics and medical informatics	course	11.00-13.00	1-3	Amphiteater
	Biostatistics and medical informatics	p.a.	14.00-17.00	2*	Computer Lab
WEEK 6 16–20 November 2026					
DAY	SUBJECT	ACTIVITIES	HOUR	GROUPS	LOCATION
Monday	Biostatistics and medical informatics	p.a.	10.00-13.00	1*	Computer Lab
	Biostatistics and medical informatics	p.a.	14.00-17.00	2*	Computer Lab
	Biostatistics and medical informatics	cours	17.00-19.00	1-3	Amphiteater
Tuesday				1-3	
	Biostatistics and medical informatics	course	14.00-16.00		Amphiteater
FRIDAY				1*	
	Biostatistics and medical informatics	ctical examina	8.00-11.00		Computer Lab
	Biostatistics and medical informatics	ctical examina	11.00-14.00	2*	Computer Lab



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Disciplina Informatică Medicală și Biostatistică

Facultatea de Medicină, Universitatea de Medicină și Farmacie Iuliu Hațieganu, Cluj-Napoca, România

EZENTARE ▾ DIDACTIC ▾ CERCETARE ▾ INFORMAȚII ▾

RO FR GB

Metodologia Cercetării Științifice -
Medicină an 2
MCS MG RO - an 2

Informatică Medicală și Biostatistică
an 1 Medicină Dentară
INFO MD RO - 1

INFO MG1 RO MCS MG2 RO INFO MD1 RO MCS MD2 RO DOCTORAT



<http://www.info.umfcluj.ro>

The screenshot shows the website of the Department of Medical Informatics and Biostatistics at the Faculty of Medicine and Pharmacy, Cluj-Napoca, Romania. The header is dark green with white text. Below the header is a navigation bar with links: TION, EDUCATION, RESEARCH, and INFORMATION. On the right, there is a logo for MIB (METODOLOGIE INFORMATICA STATISTICA) and flags for Romania, France, and the UK. The main content area features a carousel of images. The first image shows students in a classroom and is titled 'Research Methodology - Dental Medicine - 2' with the code 'MCS MD EN - 2nd year'. The second image shows a group of students looking at a laptop and is titled 'Medical Informatics and Biostatistics' with the code 'INFO MG EN - 1'. This second image is circled in red. Two orange speech bubbles are overlaid on the image: one pointing to the first image with the text 'Your section' and another pointing to the second image with the text 'English version'.

Department of Medical Informatics and Biostatistics
Faculty of Medicine and Pharmacy, Cluj-Napoca, România

English version

Your section

Research Methodology - Dental Medicine - 2
MCS MD EN - 2nd year

Medical Informatics and Biostatistics
INFO MG EN - 1



MedInfo – Medicine first year

Children categories



Courses

[View Items...](#)



Practical activities

[View Items...](#)



Resources

[View items...](#)



Teaching Materials – NOVARA Extension

[View Items...](#)

That's the
place!

The outline of the presentation for each course will be posted on here + the practical activities



PRESENTATION: MATERIALS

- Courses presentations
- Practical activities
- Bibliography:
 - Bernard ROSNER, Fundamentals of Biostatistics, any edition.
 - Robert H. RIFFENBURGH, Statistics in Medicine, any edition.
- Other....



Regulations - Students' rights

- **To attend the examination**
 - **Once in an examination session**
 - **Maximum 3 times / academical year**



Evaluation

Type of learning activity	Assessment criteria	Assessment methods	Weight in final grade
Lecture	Correctness of answers to multiple responses question; Ability to synthesize and integrate knowledge from the taught topics.	Written exam, 35 multiple choice question	70%
Practical activity	Correctness of execution of the requirements; Ability to identify and correct mistakes in real time; Accuracy and quality of the final result; Explanation of the clinical or statistical reasoning; Compliance with the allotted time.	Practical exam, at computer, making documents/ power point presentation, using Microsoft Excel and/or Jamovi to analyses data, and interpret the results	30%

Minimum performance standard – obtain 5 in both exam



Theoretical exam - 35 questions: 100 minutes to respond

You may receive an additional max 3 bonus points for your responses to quizzes during the course.

8) * The following are days of incubation for a contagious disease: 7; 3; 4; 7; 6; 6; 4; 5; 3; 7; 5; 4; 7; 6; 2; 3; 5; and 6. Coefficient of variation is equal to:

- a) 0.32
- b) 0.23
- c) 0.27
- d) 0.29
- e) Could not be calculated based on provided data

Only one correct answer!

16) Let be a statistical series with the following data: 40, 60, 20, 20, 60, 80, 80, 40, 60, and 80. The relative frequency of 0.3 corresponds to:

- a) 20
- b) 40
- c) 60
- d) 80
- e) None is correct

Two correct answers !

7) The following data represent the age of first episode of myocardial infarction on a series of male patients: 38, 50, 23, 45, 70, 33, 25, 40, 50, 62, and 59. The values of quartiles are as follows: $Q1 = 35.5$, $Q2 = 45$ and $Q3 = 54.5$. The following statements are true:

- a) $Q2 - Q1 = 9.5$
- b) $Q3 - Q2 = 9.5$
- c) Data are asymmetrical distributed
- d) Data are symmetrical distributed
- e) Data are approximately symmetrical distributed

>2 correct answers!

The students will receive the necessary formulas



Final Grade

- If the student obtain
 - minimum 5 at practical part of the exam
 - minimum 5 at theoretical part of the exam
- The grade will be computed as weighted mean
 - Theoretic part of the exam - 70%
 - Practical part of the exam - 30%
 - Weighted mean = $0.70 \times \text{theoretic exam mark} + 0.30 \times \text{practical exam mark}$



UNIVERSITY POLICY

- The student has an obligation to participate in **70%** of the lectures.
- The attendance of the lectures will be recorded.



Regulation – Practical activities

- **100% attendance**
 - The presence will be recorded



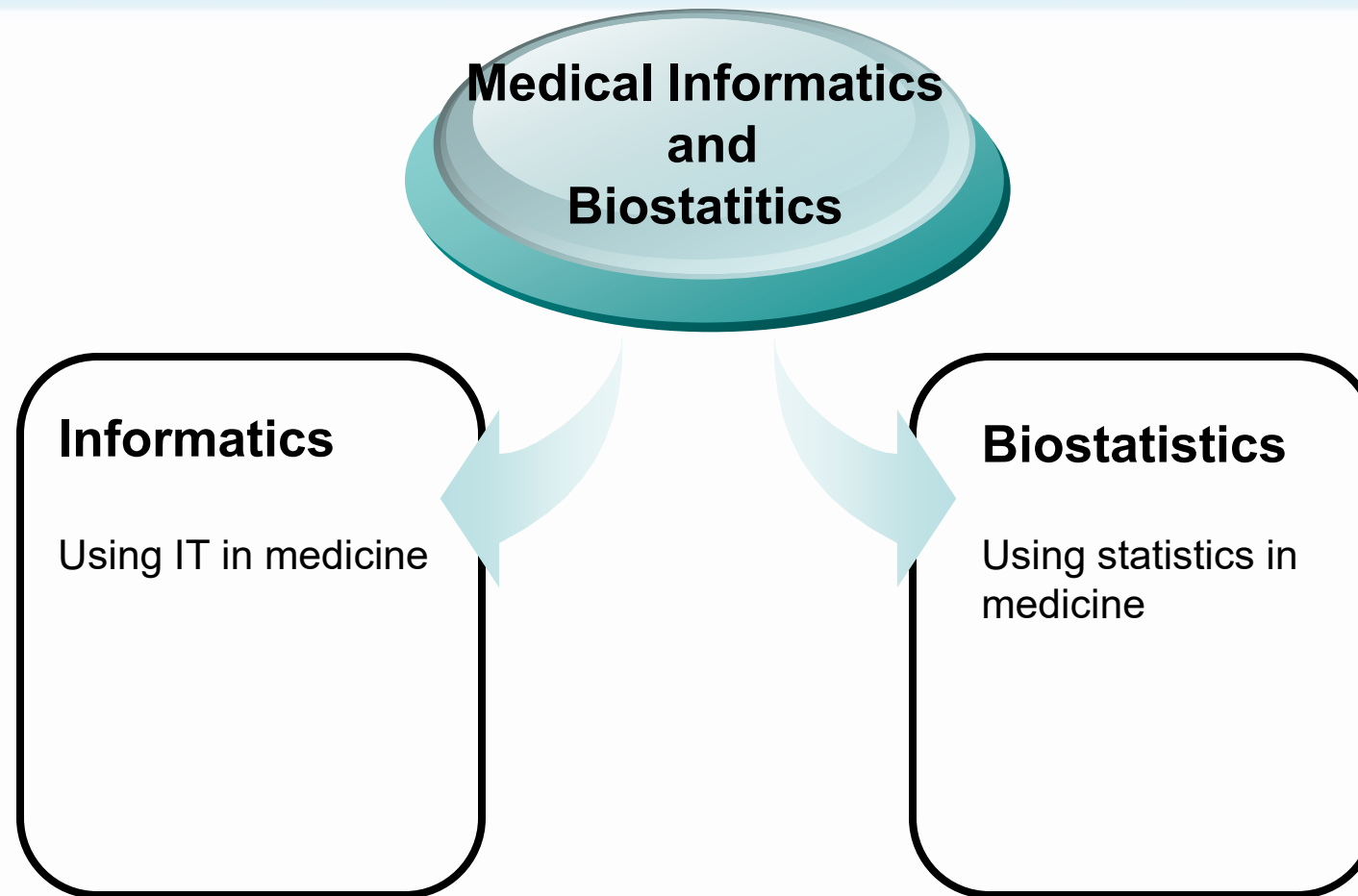
Regulations

- **Students can't attend the theoretical part of the exam in Winter session if:**
 - Did not pass the practical exam
 - Did not attend minimum 70% of the lectures



Questions

- Ask me on e-mail – tcalinici@umfcluj.ro
- Ask me on Microsoft Teams private chat – Călinici Tudor





Scientific knowledge

- **Francis Bacon - (1561–1626)**

- ❖ The senses will provide us knowledge
- ❖ True science is gained by processing the sensory data in a methodical and rational manner
- ❖ inductive method characterized by the use of analysis, comparison, observation and experiment





Records and evidences

- **David Hume** (1711–1776)
- no matter how many individual records we'll have, we can not enunciate a universal law





THE BEST TRUTH



- **Karl Popper (1902–1994)**
 - The laws of nature can not be demonstrated as true or false but we may considered them provisionally true
 - No scientific truth will be proclaimed universally true for an indefinite period of time



Thank you!

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