DISCIPLINE SHEET

ACADEMIC YEAR

2022 - 2023

1. DATA ABOUT THE STUDY PROGRAM

1.1 Institution of higher education	UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
1.2 Faculty	**MEDICINE**
1.3 Department	2
1.4 Study Domain	HEALTH
1.5 Study cycle	LICENCE
1.6 Study program/ Qualification	MEDICINE

2. DATA ABOUT THE DISCIPLINE

2.1 DISCIPLINE NAME				**BIOSTATISTICS FOR MEDICAL RESEARCH**	
2.2. Discipline code				MED1215.1	
2.3 The holder of course activities				Prof. Alexandru Dragos, M.D., PhD	
2.4 The holder of seminar activities				Prof. Alexandru Dragos, M.D., PhD	
2.5.Academic degree				Prof.	
2.6. Employment (base norm/associate)				Base norm	
2.7. Year of study	**I**	2.8. Semester	**II**	2.9. Course type (content) 2.10. Regime of discipline (compulsoriness)	**CCD**

3. TOTAL ESTIMATED TIME (teaching hours per semester)

3.1 Number of hours per week	**1**	3.2 From which -course	**1**	3.3 seminary/laboratory	**-**
3.4 Total hours in curriculum	**14**	3.5 From which -course	**14**	3.6 seminary/laboratory	**-**
Time found distribution (hours)					
Study by manual, course support, bibliography, and notes					**14**
Additional documentation in the library, specialized electronic platforms and, on the field					**14**
Training seminars / labs, homework, reports, portfolios, and essays					**2**
Tutoring					**2**
Examinations					**2**
Other activities... counselling, student circles					**2**

3.7 Total hours of individual study	**36**
3.9 Total hours per semester	**50**
3.10 Number of credits)	**2**

4. PREREQUISITES (where appropriate)

4.1 curriculum	High school basic knowledge is sufficient
4.2 competency	-

5. CONDITIONS (where appropriate)

5.1. of curse deployment	Study in advance of the course topic is welcome, to generate a dialogue during lectures
5.2. of seminary/ lab deployment	-

6. SPECIFIC COMPETENCES ACCRUED

PROFESSIONAL COMPETENCES	**C5.** To initiate and conduct a scientific research activity and / or a training activity inside the field of competence

TRANSVERSAL COMPETENCES	**CT1**. Autonomy and responsibility • the acquisition of moral reference points, the formation of professional and civic attitudes, that will allow to the students to be fair, honest, helpful, understanding, unconflictuals, to cooperate and to be comprehensive in the face of suffering, to be available to help people, and to be interested in community development; • to know, to respect and to contribute to the development of moral values and professional ethics; • to learn how to recognize the problems when they arise, and provide solutions for solving them. **CT2**. Social interaction • to recognize and to have respect for diversity and multiculturalism; • to have or to learn how to develop teamwork skills; • to communicate orally and in writing the manner of work requirements, the obtained results, to consult with the team; • to engage themselves in voluntary activities, to know the essential problems of the community. **CT3.** Personal and professional development • to have opening to lifelong learning, • to be aware for self-study as a basis of personal autonomy and professional development; • to derive the optimum and creative potential in their own collective activities; • to know how to use information and communication technologies.

7. DISCIPLINE OBJECTIVES (based on the grid of specific competences acquired)

7.1 The general objective of the discipline	GENERAL OBJECTIVES Training students to have general knowledge of the statistical principles and methods of medical biostatistics Training students to apply the principles and methods of biostatistics in medical work Acquisition of concepts and knowledge, skills, behaviours, attitudes and values needed for medical practice Making precise correlations between educational objectives of the course and previous educational experience, as the basis of new scientific performance that students should acquire Assessment of student performance should be based on continuous, periodic and final measurements, regarding the acquired level of knowledge, skills, abilities, behaviours and values
7.2 The specific objectives of the discipline	1. Training students to acquire the knowledge of how to approach medical statistics 2. Acquiring practical skills in using computer programs for medical statistics 3. Development of a statistical mind-set, as opposed to the exact thinking of classical logic. Upon completion of the course students will be able to acquire these abilities COGNITIVE ABILITIES. to analyse critically variations in biological parameters and to identify factors that induce these variations to interpret deviations from normal of biological parameters and seek clinical relevance; to interpret diagrams, charts, graphs of functions or physiological parameters; to integrate theoretical and practical knowledge gained in the discipline of biostatistics with those obtained from other fundamental disciplines and use them as a basis for clinical training; communicate clearly, rigorously, knowledge gained and the results obtained; to issue hypotheses and verify them by processing experimental data PRACTICAL SKILLS To organize the laboratory activities: to form a team, share tasks, collaborate, communicate requirements, prepare materials, follow a given protocol, record the results, communicating results, discuss them as a team; To use specific teaching material and lab equipment medical informatics; ATTITUDES To be open to acquiring moral guidelines, training of professional and civic attitudes that enable students to be fair, honest, non-confrontational, cooperative and understanding in the face of suffering, available to help people interested in the development of the community; To know, respect and contribute to the development of moral values and professional ethics; To learn to recognize when a problem arises and provide responsible solutions to solve them. To recognize and have respect for diversity and multiculturalism; To have or learn to develop teamwork skills;

	To communicate orally and in writing requirements, working methods, results, consult with the team; To get involved in volunteering, to know the essential problems of the community. To be open to lifelong learning, To realize the need for individual study as the basis of personal autonomy and professional development; To optimally exploit one's creative potential and collective activities; To know how to use information and communication technologies To take initiative, to engage in educational and scientific activities of the discipline

8. CONTENTS

8.1 Course (content units)	hours
1. Introduction to medical research. The stages of experimental design and steps of an experimental study	2
2. Types of research works. The structure of a research article. Structure of a master or PhD Thesis	2
3. Descriptive statistics – indicators for numeric data and categorical data. Distribution functions in medical statistics, normal or Gauss distribution; examples.	2
4. Parametric and nonparametric statistical tests to compare numerical data: Student's t test, ANOVA, Mann-Whitney-Wilcoxon, Kruskal-Wallis	2
5. The notion of statistical correlation. Interpretation of correlation coefficients. Cross-tabulation tables and indicators to describe them. Chi square test. ROC Curve	2
6. The notion of regression and applications in biological sciences and medicine. Linear Regression. Multivariate Regression. Survival Analysis – Kaplan-Meier curve	2
7. EXAM	2
TOTAL	**14**
BIBLIOGRAPHY **http://www.umfcv.ro/medicina,studenti-disciplina-biostatistica** **http://www.umfcv.ro/en/medicine,students-biostatistics**	
8.2 Practical work (topics / themes)	
-	
REFERENCES **http://www.umfcv.ro/medicina,studenti-disciplina-biostatistica** **http://www.umfcv.ro/en/medicine,students-biostatistics**	

9. CORROBORATING THE DISCIPLINE CONTENT WITH THE EXPECTATIONS OF EPISTEMIC COMMUNITY REPRESENTATIVES, PROFESSIONAL ASSOCIATIONS AND EMPLOYEE REPRESENTATIVES RELATING TO THIS PROGRAM

- Biostatistics is a fundamental discipline, mandatory for a student to become a physician able to use computer technology, ubiquitous in current medical practice
- Knowledge, practical skills and attitudes learned in this discipline provide the basis for understanding health issues that will be detailed in other disciplines, involving data acquisition techniques, working with database, data presentation and comparison (charts, statistical tests)

10. MHETODOLOGICAL LANDMARKS

Types of activity	Teaching Techniques / learning materials and resources: lectures, interactive group work, learning problems / projects etc. Lectures, analysis, synthesis, comparison, generalization, learning in order to achieve interactive feedback, explaining the problems highlighted by students, consultations, multimedia presentations
Course	Combined used of the following methods: lecture, debate
Practical work	-
Individual study	1.Study and understanding of the lecture notes
	2. Study with manual, lecture written support
	3. Study of the indicated minimal bibliography
	4. Additional documentation in the library
	5. Preparing reports, essays
	6. Preparing for intermediate tests/ projects
	7. Preparing for final examination
	8. Consultations
	9. Documentation on the Internet
	10. Communication and collaboration on electronic platforms
	11. Other activities

11. RECOVERY PROGRAM

Absences recoveries	**No. absences that can**	**Place of deployment**	**Period**	**In charge**	**Scheduling of topics**

	recover				
Schedule consultations / Students' Scientific Circle	2h/week	Department of Medical Informatics and Biostatistics	Each Monday – 18:00 to 20:00	All teaching members of the department	According to the internal schedule
Program for students poorly trained	2h/week	Department of Medical Informatics and Biostatistics	Each Monday – 16:00 to 18:00	All teaching members of the department	According to the internal schedule

12. ASSESMENT

Activity	**Types of assesment**	**Methos of evaluation**	**Percentage from final grade**
Lecture	Formative assesment during the semester, direct dialogue during lectures Summative assesment during the exam	Written exam/ multichoice using online platform	90%
Practical work	-	-	**-**
Periodic assesment			-
Assement of individual activities			10%
Minimum performance standard			at least 50% for each component of the evaluation

13. GUIDANCE AND COUNSELLING PROGRAMS

Professional guidance and counselling programs (2 hours/monthly)

Scheduling the hours	**Place of deployment**	**In charge**
Last Monday of each month of the semester - 11:00 to 14:00	Department of Medical Informatics and Biostatistics	All teaching members of the department

Endorsement date in the department: 27.09.2022

Department Director,	**Coordinator of study program,**	**Discipline holder,**
Prof. Eugen OSIAC	**Prof. Marius Eugen CIUREA**	**Prof. Dragos ALEXANDRU**