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				**MEDICAL INFORMATICS**	
2.2. Discipline code				MED1207	
2.3 The holder of course activities				Georgescu Daniel, Serbanescu Mircea	
2.4 The holder of seminar activities				Geogescu Daniel, Serbanescu Mircea	
2.5.Academic degree				Associate Proffesor/Lecturer	
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	**2**	3.2 From which course	**1**	3.3 seminary/laboratory	**1**
3.4 Total hours in curriculum	**28**	3.5 From which course	**14**	3.6 seminary/laboratory	**14**
Time found distribution (hours)					
Study by manual, course support, bibliography, and notes					**8**
Additional documentation in the library, specialized electronic platforms and, on the field					**8**
Training seminars / labs, homework, reports, portfolios, and essays					**3**
Tutoring					**1**
Examinations					**1**
Other activities, counselling, student circles					**1**

3.7 Total hours of individual study	**22**
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 course deployment	Study in advance of the course topic is welcome, to generate a dialogue during lectures/online
5.2. of seminary/ lab deployment	Preparing in advance for the laboratory activities, through individual study /online

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 structure and functioning of the digital computer and the operating system, from the point of view of an user, to master the use of the computer as a tool. Familiarize students with the main directions of medical informatics and training them to apply computer technology and methods to create new tools, useful in medicine. Acquisition of concepts and knowledge, skills, behaviours, attitudes, skills and values needed for medical practice in the clinic 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	SPECIFIC OBJECTIVES Training students for the purposes of general knowledge of a digital computer's structure and functioning from the point of view of a user COGNITIVE ABILITIES. Training of practical skills necessary for efficient use of the computer. Training students in the specific fields pertaining to Medical Informatics 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 ones 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
Unit 1 Introduction. Information. Knowledge. Informatics. History and moments of advancement. Informatics in Medicine	0.5
Unit 2 Structure and functioning principles of digital computers. Generation of computers, PC computer family	0.5
Unit 3 Operating systems, their basic functions, the link between computer and operating system.	
Operating systems, their basic functions, basic elements, files, folders	0.5
MS Windows - operating elements in Windows. Windows Explorer.	0.5
Unit 4 Internet. Computer malware	
Internet	0.5
Computer malware	0.5
Unit 5 Introduction to HTML. The creation of web pages	1
Unit 6 Research methodology. Design and presentation of scientific works. Examples using Power Point	1
Unit 7 Medical documentation, learning and knowledge testing	1
Unit 8 Databases	
Databases. Database management systems. Relational databases	1
Databases operations. Exemples using Microsoft Access	1
Unit 9 Digital acquisition and processing of biological signals	
Digital acquisition and processing of biological signals: principles, acquisition systems, processing methods	1
Examples - ECG, EMG, EEG signals	1
Unit 10 Bed instrumentation. Patient monitoring	
Bed instrumentation. Monitoring patients in intensive care units. Intraoperative monitoring of patients.	1
Ambulatory monitoring of patients	1
Unit 11 Medical imaging. Digital processing of images. Computerized ultrasound. Computed tomography (CT)	1
Unit 12 Hospital Informatics. The unique integrated informatics system (SIUI) of Romanian Health Insurance Services	1
TOTAL	**14 h**
BIBLIOGRAPHY http://www.umfcv.ro/medicina,studenti-disciplina-informatica-medicala http://www.umfcv.ro/en/medicine,students-medical-informatics	
8.2 Practical work (topics / themes)	Hours
Introduction. Basic elements of a computer. The computer network. Computer and network login Operating systems. MS Windows operating elements. Windows Explorer.	2
Word processors. Word	2
Spreadsheets. MS EXCEL	2
Scientific work. Power Point. Graphic editors Paint Brush in Windows	2
Computer programming (HTML)	2
Databases. MS ACCESS	2
Medical Image Processing. Examples using ImageJ software	2
TOTAL	**14 h**
BIBLIOGRAPHY http://www.umfcv.ro/medicina,studenti-disciplina-informatica-medicala http://www.umfcv.ro/en/medicine,students-medical-informatics	

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

- Medical Informatics 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 (charts, scientific presentations), medical imaging and so on

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. In case of special situations (alert states, emergency states, other types of situations that limit the physical presence of people) the activity can be carried out online using computer platforms

	approved by the faculty / university. The online education process will be adapted accordingly to ensure the fulfilment of all the objectives provided in the discipline sheet. The teachers, through the agreed electronic platforms, will create virtual classes and will send to the students, on the e-mail addresses provided by them and through other available means of communication (text messages, etc.) the invitations and access data necessary for connection. The lectures will be held by presenting multimedia materials for each topic, accompanied by explanations of teachers. The practical works will consist in direct, online exemplification of the instructions and operations necessary for the practical realization of the concepts presented in the lectures, through computer programs dedicated to each activity (MS Word, MS Excel, MS Access, MS PowerPoint, Notepad, ImageJ).
Course	Combined used of the following methods: lecture, debate
Practical work	Combined used of the following methods: practical applications, case study projects
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. Specific training for seminaries / laboratory Activity
	6. Preparing reports, essays
	7. Preparing for intermediate tests/ projects
	8. Preparing oral presentations
	9. Preparing for final examination
	10. Consultations
	11. Field documentation
	12. Documentation on the Internet
	13. Communication and collaboration on electronic platforms
	14. Other activities

11. RECOVERY PROGRAM

	No. absences that can recover	**Place of deployment**	**Period**	**In charge**	**Scheduling of topics**
Absences recoveries	2	Department of Medical Informatics and Biostatistics/ online platform.	Last week of semester	All teaching members of the department	According to the internal schedule
Schedule consultations / Students' Scientific Circle	2 h/week	Department of Medical Informatics and Biostatistics/ online platform.	First Wednesday of each month of the semester – 12:00 to 14:00	All teaching members of the department	According to the internal schedule
Program for students poorly trained	2 h/week	Department of Medical Informatics and Biostatistics/ online platform.	Second Wednesday of each month of the semester – 12:00 to 14:00	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	75%
Practical work	Formative assesment during the semester Periodic assesment during the semester, Summative assesment in the last week of the semester	In the last week of the semester (oral) / using online platform	15%
Periodic assesment			5%
Assement of individual activities			5%
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 Friday of each month of the semester - 16:00-18:00	Department of Medical Informatics and Biostatistics/Online	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**	**Assoc. Prof. Daniel GEORGESCU**