DISCIPLINE GRID

1. Programme:

1.1.	**UNIVERSITY OF MEDICINE AND PHARMACY "CAROL DAVILA"**
1.2.	**FACULTY OF DENTISTRY/ DEPARTMENT 3**
1.3.	**DISCIPLINE: MEDICAL INFORMATICS AND BIOSTATISTICS**
1.4.	STUDY DOMAIN: **Health, sectoral regulated within European Union**
1.5.	STUDY LEVEL: **LICENCE**
1.6.	STUDY PROGRAMME: **DENTAL MEDICINE IN ENGLISH**

2. Discipline:

2.1.	DISCIPLINE NAME**: Databases for Dentistry**						
2.2.	**Location: Eforie Street no. 4-6, Bucharest**						
2.3.	Lectures tenure: **Ionuț-Adrian Chiriac, PhD - Lecturer**						
2.4	Practical classes tenure: **Ionuț-Adrian Chiriac, PhD, - Lecturer**						
2.5. Study year	**I**	**2.6. Semester**	**II**	**2.7.** Evaluation	Colloquium	**2.8.** Type of discipline	**ED/CD**

3. Estimated total time (hours/semester)

No. hours/week	**2**	out of which	**Lectures: 1**	**Laboratory session: 1**
Total hours out of learning schedule	**28**	out of which	**Lectures: 14**	**Laboratory sessions: 14**

Time distribution	**hours**
Textbook study, lecture support, bibliography and notes	11
Supplementary documentation activity in the library, on online platforms	2
Practical activity support material, homework, portfolio and essays	4
Tutorial activity	2
Examinations	1
Other activities	2
Total hours of individual study	**22**
Total hours per semester	**50**
Credits	**2**

4. Preconditions

4.1. curriculum	The student must have completed algebra and IT&C courses – "Information Technology and Computers" - high school level (regardless of the route). The student must have basic knowledge of algebra elements, computer editing - high school level and general knowledge of computer work.
4.2. proficiencies	The student must be able to: - to explore the internet - identify documentation and help menus in apps - be able to execute a sequence of steps described in an audio-video and/or writing tutorial - general operation on a computer and digital text editing.

5. Conditions

5.1. for lecture activity	The teaching activity is carried out in the amphitheater. The activity does not imply special environmental conditions. The room must provide a capacity of 90 students. In terms of infrastructure, the room must be equipped with computer (including the necessary software applications), projection screen and video projector. The projection screen must be large enough to allow the slides to be projected in such a way that they are visible from any place in the room. The internet connection and an audio system are optional. If the course activity cannot be carried out in normal regime (the one described above), for reasons of natural disasters, pandemics, etc. it will be carried out online, with synchronous activities on one of the 2 platforms of UMFCD G-Suite or Moodle.
5.2. for laboratory activity	The didactic activity takes place in the seminar/laboratory room. The activity does not imply special environmental conditions. Complete PC workstations are required in proportion to the number of students in the group. All computer equipment must be connected to the Internet and have installed the computer applications necessary for an optimal performance of the teaching activities. If the laboratory activities cannot be carried out in normal regime (the one described above), for reasons of natural disasters, pandemics, etc. they will be carried out online, with synchronous activities on one of the 2 platforms of UMFCD G-Suite or Moodle.

6. Accumulated skills

6.1. Proficiencies ***(knowledge and abilities)***	**Acquired skills by the student:** - Deepening knowledge on classification, codification, organization, structuring, recording and accessing information in the electronic environment. - Developing skills in organizing, structuring, ordering, selecting, searching, retrieving, extracting and transferring information in working with computer registers and medical databases. - Deepening knowledge, training and learning the ability to use database exploitation facilities for the purpose of formulating professional hypotheses and conclusions - Familiarity with large databases (din terms of number of records – bigdata, data warehouse) - Deepening the functionalities offered by the MS ACCESS
6.2. Transversal skills ***(role, professional and personal development)***	- analytical and synthesis capacity - the ability to integrate into a multidisciplinary work environment - the ability to communicate in technical language - supporting a professional point of view using arguments derived from advanced database analysis - the ability to work in a remote team

7. Objectives (based on the grid of acquired specific skills)

7.1. General objective	Being an optional course, it develops the skills acquired in the Discipline of Medical Informatics and Biostatistics, especially in terms of databases. The course presents theoretical notions, concepts and practical aspects regarding databases, classification, coding, structuring, organization, registration, processing, transmission and communication of medical information (administrative and clinical).
7.2. Specific objectives	- Training the ability to identify input data and data output from a problem

	- Forming the ability to design the structure of the database by defining the types of data and the relationships between them - Forming the ability to operate databases, extract relevant information and draw conclusions supported by database analysis

8. Content

8.1. Lectures	No. hrs/topic	Teaching methods	Obs.
1. Introductory Lecture	2	- Presentations with the help of slides - Demonstrations - Heuristic Dialogue - Conversation **Classroom/Informatics Laboratory** **Course support:** - Power Point presentation - multimedia educational software - Google Classroom - course support manuals (electronic, multimedia and printed format) - practical demonstration support (Internet usage) If the course activity cannot be carried out face-to-face, the online platforms will be used in synchronous regime: **Cloud/Online - Practical work support:** Educational platform Google Suite -Google Classroom, Google Meet, Google Calendar, Google Forms, Google Drive, The Moodle https://cursuridentara.umfcd.ro/ platform.	N/A
1.1. Course Presentation, Going through the discipline sheet. Browse Applicable UMFCD Regulations 1.2. Description of the applications and IT tools used 1.3. Practical examples of the relevance of databases to dentists 1.4. Medical Information Flow and Layers of Information Organization in Dentistry			
2. Types of Database Architectures	2		
2.1 Tables - Fields/Records 2.2 Forms - Entering and updating data 2.3 Big Data in Dentistry 2.4 Interoperability between different types of data			
3. **Advanced Database Operations**	2		
3.1 Queries – Conditions – Sorting/Filtering 3.2 Queries calculated fields – edit formulas and data format configuration 3.3 Expert Systems in Dentistry			
4. **Database Facilities**	2		
4.1 Reports – Information Organization in Reports 4.2 Relationships - Connections in a database 4.3 Management Programs in Dentistry			
5. Management applications offices and clinics	2		
Management Programs in Dentistry - 5.1 New Patient, Patient Record, Anamnesis 5.2 Patient Data, Daily Appointment, Schedule, Materials Management 5.3 Dental Mirror, Dental Status, Plan Treatment Sheet, Prosthetic Sheet, of Dental Technicians List 5.4 Database of Receipts and Payments, Balance for the Clinic, Centralizer Reports, Statistics Examples on DentaPro, Dentalmap, etc.			
6. Artificial Intelligence used in Dentistry	2		
6.1 What are Artificial Intelligence systems 6.2 Evolution from Expert Systems to Artificial Intelligence in Dentistry 6.3 Artificial Intelligence Systems Applications in Dentistry			
7. **Final Evaluation**	2		

7.1 Final Evaluation			

8.2. Laboratory Session	**No. hrs/topic**	**Teaching method**	**Obs.**
1. Introductory LP ● Presentation of the online use of educational software **Google Classroom, Meet, Calendar, Forms, Drive the Moodle platform** https://cursuridentara.umfcd.ro/. ● **Laboratory** - Initiation on how to work and use the local computing **network** and internet access. ● Work Protection Training	2	Presentation Information analysis Heuristic conversation, Demonstration Discovery and guided research Problematization, exemplification, debate **Informatics Laboratory** - MS Windows operating system software, - MS Office software package - Software - Power Point presentation - Multimedia educational software - Google Classroom - manual in electronic and printed format - dental imaging demo software applications - computer applications in dental medicine **Technical equipment/ Informatics laboratory:** Local computing and Internet network - network-interconnected workstations - computer-assisted training and evaluation software (Veyon and Moodle system) - multimedia equipment - Projector - projection screen - blackboard **Support of practical works: Online** Educational platform Google Suite - Google Classroom, Google Meet, Google Calendar, Google Forms, Google Drive,	
2. Microsoft Access program. ● Design of relational databases. Practical Application (I) Tables/Fields and Records. Data Types and Properties	2		
3. Microsoft Access program. ● Design of relational databases Practical Application (II) Forms/Stages of Configuration and Editing Format. Entering and Updating data	2		
4. Microsoft Access Program ● Design of relational databases Practical application (III). Sorting and Filtering. Simple and Complex Queries.	2		
5. Microsoft Access Program ● Design of relational databases Practical application (IV) Queries with Calculation Formulas. Functions and Statistical Formulas in Access	2		
6. Microsoft Access Program ● Design of relational databases Practical application (V) Relationships and Reports. Data Import and Export in Access.	2		
7. Assessment	2		

		The Moodle https://cursuridentara.umfcd.ro/platform.	

8.3 Bibliography for lectures and laboratory/practical sessions

1. ECDL Database Manual - Microsoft Access 2019 - Raluca Constantinescu, Ionuț Dănăilă, ISBN / ISSN, 978-606-9037-10-2, ECDL Romania Publishing House 2020
2. Ionuț-Adrian Chiriac, "Database Applications - Microsoft Access - Guide for Practical Works", 2021 – published online on Google Classroom – in the process of publishing printed physical format
3. ECDL Spreadsheet Manual - Microsoft Excel 2019 - Raluca Constantinescu, Ionuț Dănăilă, ISBN / ISSN 978-606-9037-09-6, ECDL Romania Publishing House 2020
4. Exce Practical Guide - Marius Roman ISBN/ISSN, 9786066727570, Editura Rentrop & Straton 2021
5. Microsoft Access 2016 Bible – Michael Alexander, Wiley Ed., USA, ISBN: 978-1-119-08654-3, 2015
6. Ionuț Adrian Chiriac - "Contributions regarding the interaction with medical education systems for persons with auditory disabilities" Politehnica Publishing House Timisoara, 2015
7. Ionuț-Adrian Chiriac, "Statistical Applications - Microsoft Excel - Guide for Practical Works", 2021 – published online on Google Classroom – in the process of publishing printed physical format
8. http://192.168.0.200 – intranet site updated 2020, Laboratory of Medical Informatics and Biostatistics, Faculty of Dental Medicine, "Carol Davila" University of Medicine and Pharmacy

9. Corroborating the contents of the discipline with the expectations of epistemic community representatives, professional associations and employers in the fields representative for the program

The content of the Discipline is evaluated annually both in relation to the feedback obtained from students and especially to the expectations of the labor market reflected following the consultations with the business environment in the field in the context of the multiparty protocols signed by the faculty. The content of the Discipline is thus designed to provide professional familiarity and autonomy regarding the databases for a dentist.

10. Evaluation

Activity type	Evaluation Criteria	Methods of evaluation	% out of final grade
Lecture	- The final verification is focused on the evaluation of the knowledge and skills acquired during the semester - The Oral Exam consists in the practical solution of some requested subjects and the demonstration of the theoretical knowledge associated with the subject. **A. Knowledge of Grade 5:** Grade 5 is obtained after meeting the criteria defined in the **Minimum Performance Standard** **B. Additional knowledge for grade 10** Grade 10 will be determined according to the scoring system associated with the evaluation grid.	Test / Oral Exam	60%
Laboratory sessions	Periodic assessment of students is made by evaluating the projects carried out during the semester, according to the scoring scales established at the level of the discipline, for each project and topic The grade obtained in the practical activity is the result of the arithmetic average of the marks obtained throughout the semester. Graduation implies the full delivery of the projects according to the format and requirements presented and requested in advance on Google Classroom and obtaining the passing average.	Project Evaluation/ Project Oral Defense, Tests	40%
Minimum performance standard			

Correctly define the architecture of a database for a practical application. Knowledge and differentiation between the main types of objects and operations that can be performed in databases - data entry, queries, sorting, filtering. Encoding of the main types of data - numeral, ordinal, date, text, etc. Definition and applications of Big Data, Expert Systems and Artificial Intelligence in Dentistry.

Date:
07.06.2024

Chair of Medical Informatics and Biostatistics
Lecturer Ionuț-Adrian Chiriac

Date of the approval in Department Board:

Department Director,
Professor Ecaterina IONESCU