MINISTERUL EDUCAȚIEI
ROMÂNIA
UNIVERSITATEA DE MEDICINĂ, FARMACIE, ȘTIINȚE ȘI TEHNOLOGIE „GEORGE EMIL PALADE" DIN TÂRGU MUREȘ

Syllabus

academic year: 2021 - 2022

1. Data regarding the program

1.1 Higher education institution: 'George Emil Palade' University of Medicine, Pharmacy, Sciences and Technology of Târgu Mureș
1.2 Facultaty of: Dental medicine
1.3 Department: ME1
1.4 Field of study: Health, level of regulation: sectorial
1.5 Cycle of study: licence
1.6 Program of study: Dental medicine

2. Data regarding the discipline

2.1 Name of discipline: Healthcare informatics and biostatistics			
2.2 Course coordinator: Șef l dr Pop Marian			
2.3 Practical activities coordinator(s): Sef. l dr. Pop Marian			
2.4 Year of study: II	2.5 Semester: 2	2.6 Type of evaluation: E	2.7 Type of discipline: Obl

3. Total estimated time (hours per semester of didactic activities)

3.1 Hours per week: 8	3.2 lecture: 4	3.3 practical activities: 4
3.4 Total hours in curriculum: 56	3.5 lectures: 28	3.6 practical activities: 28
3.7 Distribution of time pool		
- study of books, lecture materials, bibliography, notes: 5		
- supplemental documentation at the library, from specialized information portals and in the field: 5		
- preparation for seminaries / laboratories, homework, reports, portfolios and essays: 1		
- tutorial activities: 1		
- examinations: 1		
- other activities: 1		
3.8 Total hours of individual study: 14		
3.9 Total hours: 70		
3.10 Credits: 2		

4. Prerequisites (where applicable)

4.1 curricular: Not applicable
4.2 competency: Not applicable

5. Conditions

5.1 for lectures: Not applicable
5.2 for practical activities: Not applicable

6. Specific competencies acquired

6.1 professional competencies: Descrierea noţiunilor de bază ale funcţionării organismului uman şi a mecanismelor generale de producere a bolilor. - Integrarea noţiunilor de bază în concepte/ situaţii care se aplică organismului uman cu scopul de a explica semne şi simptome. - Descrierea conceptelor, teoriilor şi noţiunilor fundamentale de fiziopatologie, pe sisteme şi mecanisme de acţiune. - Stabilirea tehnicilor de îngrijire impuse de existenţa unor semne şi simptome de boală. - Stabilirea principiilor terapeutice care modifică mecanismele fiziopatologice în vederea ameliorării simptomelor bolii. - Utilizarea noţiunilor dobândite în cadrul disciplinei pentru cercetarea ştiinţifică ulterioară
6.2 transversal competencies: Realizarea unei lucrări/referat/ caz clinic cu identificarea obiectivelor de realizat, a resurselor disponibile,

condiţiilor de finalizare a acestora, etapelor de lucru, timpilor de lucru, termenelor de realizare aferente şi riscurilor aferente diverselor mecanisme fiziopatologice.
- Identificarea rolurilor şi responsabilităţilor într-o echipa pluridisciplinară şi aplicarea de tehnici de relaţionare şi muncă eficientă în cadrul echipei şi în relaţie cu pacientul.
- Utilizarea eficientă a surselor informaţionale şi a resurselor de comunicare şi formare profesională asistată (portaluri Internet, aplicaţii software de specialitate, baze de date de tip PUBMED, cursuri on-line etc.) atât in limba romană, cât şi într-o limbă de circulaţie internaţională.
- Dezvoltarea gândirii medicale şi folosirea informaţiilor ştiinţifice în contextul interdisciplinarităţii

6.3 related to the study program: Disease state identification and accurately diagnosing dental condition(s).
Conservative treatment of dento-periodontal structures.
Diagnosis and interceptive treatment of dentomaxillary anomalies.
Prosthetic restoration of dental arches.
Diagnosis,evolution and clinical examination of patients with maxillofacial surgical conditions.
Managing the theoretical and legislative bases of the health care systems operating in Romania, as well as the managerial ones regarding the dental offices.

7. Objectives of the discipline (based on the grid of specific competencies)

7.1 General objective:
The progress of modern medicine becomes increasingly dependent of the ways the computer assists the medical field. Therefore, the main goal of discipline is to familiarize students in the biomedical field with the specific skills requirements of the 'digital age' and with IT vocabulary with key technologies related to computer assisted practice and biomedical research.

7.2 Specific objectives:
-Demonstrate students ability to understand and use the main tools hardware (PC) and software used in computer science and medical informatics
-Learning important aspects of using the services of indexing and searching online information
-Acquisition of practical skills to use advanced solutions for editing office documents required format, manage and organize information exported from medical databases in spreadsheet programs, preparing electronic presentations

8.1 Content of lecture, semester 2

No	Subject	Teaching methods	Observations	ICS correlation	Hours
1	Introductory Guide. Medical informatics objectives	Oral + multimedia presentation	-	Nu este cazul	2
2	Medical informatics fields	Oral + multimedia presentation	-	Nu este cazul	2
3	Data, Information, Knowledge	Oral + multimedia presentation	-	Nu este cazul	2
4	Architecture of a digital computer. The hardware architecture of a automated computer system	Oral + multimedia presentation	-	Nu este cazul	2
5	Architecture of a digital computer. The software architecture of a automated computer system	Oral + multimedia presentation	-	Nu este cazul	2
6	Computer Networks – introductory guide	Oral + multimedia presentation	-	Nu este cazul	2
7	The Internet – introductory guide	Oral + multimedia presentation	-	Nu este cazul	2
8	Online documentation. Searching for information on the Internet (I) - Introduction, types of tools and services for searching information on the Internet	Oral + multimedia presentation	-	Nu este cazul	2
9	Online documentation. Searching for information on the Internet (II) Ways to use search engines (Google) and directory services (Yahoo Directories) to search for information in the biomedical field. Automated medical documentation services (Medline)	Oral + multimedia presentation	-	Nu este cazul	2
10	Online documentation. Searching for information on the Internet (III) Evaluation of quality of information published on the Internet / World Wide Web.	Oral + multimedia presentation	-	Nu este cazul	2
11	Office applications in the biomedical field: Word processing	Oral +	-	Nu este	2

	software. Desktop Publishing (DTP). Advanced text editors.	multimedia presentation		cazul	
12	Office applications in biomedical field: spreadsheet software (MS Excel, OO Calc). Software for electronic presentations. Software for organizing activity. Suite of office applications (MS Office, Lotus Smart Suite, OpenOffice).	Oral + multimedia presentation	-	Nu este cazul	2
13	Biomedical databases.	Oral + multimedia presentation	-	Nu este cazul	2
14	Biomedical simulation and modeling.	Oral + multimedia presentation	-	Nu este cazul	2

Bibliography

1. Tigan S., Achimaş A., Drugan T.: Curs de Informatică şi Statistică Medicală, ed. SRIMA, Cluj-Napoca, 2001
2.Măruşteri M., Buraga S, Acostăchioaie D.: Primii paşi în Linux (carte + CD-ROM cu ROSLIMS LinuxLive CD), Ed. Polirom Iaşi, 2006, carte disponibila online https://www.slideshare.net/busaco/m-mruteri-s buraga-d-acostchioaie-primii-pai-n-linux
3.Măruşteri M.: Documentare online, manual disponibil online pe serverele UMFST Tg. Mures http://www.umftgm.ro/info/doconline_ROV2.pdf
4.Marius Măruşteri – Documentare online – prezent si perspective, disponibil online pe serverele UMFS Tg. Mures https://www.umfst.ro/info/english/doconline.pdf
5.Data.Information.Knowledge - material didactic disponibil online pe serverele UMFST Tg. Mures https://www.umfst.ro/info/english/Date_info_know.pdf
6.Blachman N. – Googleguide, disponibil online la http://www.googleguide.com/contents/
7.Gari D Clifford, Joaquin A Blaya, Rachel Hall-Clifford and Hamish SF Fraser: Medical informationsystems: A foundation for healthcare technologies in developing countries, Biomedical Engineering Online, 2008 https://biomedical-engineering-online.biomedcentral.com/articles/10.1186/1475-925X-7-18
8.van Bemmel J., Musen M.A., Musen Mark A.: Handbook of Medical Informatics, Springer PublishingHouse, 2002, online book la

8.2 Content of laboratory, semester 2

No	Subject	Teaching methods	Observations	ICS correlation	Hours
1	Basic knowledge of using computers	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
2	File Managers. (Windows Explorer): General Concepts. Files. Folders/Directories	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
3	Utilization of Office software in biopharmaceutical field	Practical demostrations. Synchronous/asynchronous e-learning methods.		Electronic Medical Records (EMR)	2
4	Advanced text editors. MS Word (I): General concepts. Page formatting; paper, fonts, text formatting, paragraph formatting	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
5	Advanced text editors. MS Word (II): characteristic elements of MS Word text editor: how to select text; operations with blocks, operations with files	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
6	Advanced text editors. MS Word (III): OLE technology (Object Linking and Embedding) – linking and embedding objects in a Word file. Mixing text and image in a Word file.	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
7	Advanced text editors. MS Word (IV) – creating and editing tables	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
8	Advanced text editors. MS Word (V) – the equation editor	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
9	Spreadsheet software (MS Excel, OO Calc). MS Excel (I) – General concepts ; creating workbook; sheets and cells formatting and editing.	Practical demostrations. Synchronous/asynchronous e-learning methods.		Electronic Medical Records (EMR)	2
10	Spreadsheet software MS Excel (II): using objects, editing formulas,	Practical demostrations. Synchronous/asynchronous			2

	using absolute and relative adresses.	e-learning methods.			
11	Spreadsheet software MS Excel (III): using simple and complexe functions	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
12	Spreadsheet software MS Excel (IV): Diagrams /Charts	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
13	Electronic presentation software (MS Powerpoint, OO Impress). MS Powerpoint. General concepts. Creating and using slides. Using objects in slides. Animations and trasitions.	Practical demostrations. Synchronous/asynchronous e-learning methods.			2
14	Online searching strategies. Tips on finding information on The Internet – introductory guide, tools and services for online searching; Online search services: Search engines (Google); Web Directories (Yahoo Directories);	Practical demostrations. Synchronous/asynchronous e-learning methods.		Medical Online searching strategies	2

Bibliography

Marius Măruşteri, Marius Petrișor: Informatică medicală. Îndrumător de activități practice. manual digital - (filme didactice adnotate cu activitatile de la LP), 2014, disponibil online pe platforma de e-learning RoELME - Guest login), http://roelme.umftgm.ro/moodle/course/view.php? id=256
Eugenia Tătar, Simona Tătar, Marius Măruşteri: Informatică Medicală. Bazele informaticii – lucrări practice, 2001, UMF Târgu Mureş, disponibil online pe serverele UMFST Tg. Mures https://www.umfst.ro/info/LP%20Info.pdf
Drugan T., Bondor C., Bolboacă S., Călinici T., Colosi H., Gălătuş R., Istrate D., Văleanu M.,
Achimaş A., Tigan S.: Aplicaţii practice de informatică şi statistică medicală, ed. Alma Mater, ClujNapoca, 2002
Blachman N. – Googleguide, disponibil online la http://www.googleguide.com/contents/

9. Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the domain

The knowledge acquired from the above mentioned curricular content will assure for the students the proper understanding of basic statistical glossary and of some other terms related to the field of biostatistics and will enhance their ability to understand and apply a specific statistical protocol for a particular type of clinical trial/epidemiological study or scientific experiment. It is also provided a theoretical and practical framework for critically reading of scientific articles published in the biomedical field, with the proper understanding of statistical protocols used in such articles.

10. Evaluation

Type of activity	Evaluation criteria	Evaluation methods	Percent of final grade
Evaluation during the semester			
- lecture	Correlation between theoretical and practical notions Capacity of performing practical work in the field	Multiple choice test (TBL)	5
- practical activities	Correlation between theoretical and practical notions Capacity of performing practical work in the field	Practical skills tests during the semester, to test student's ability to properly write an electronic document in a specific/imposed format	25
Final evaluation			
- theoretical final exam	Understanding and integration of all theoretical concepts. Knowledge of bibliographical references	Multiple choice test	25
- practical final exam	Correlation between theoretical and practical notions. Capacity of performing practical work	Practical exam at the end of semester.	45

Minimal performance standards:
Understanding basic glossary of specialized terms in information technology and medical informatics specific terms.
Ability to proper use the online documentation tools and solutions
Ability to properly use the advanced solutions to edit documents, using a pre-defined format
Basic understanding of biostatistical terms

11. Must seen clinical situation list

-

12. Clinical / practical abilities

-

13. Appointment timetable (for students)

Șef l dr Pop Marian	Luni, 18:20

Head of departament | Course coordinator | Practical activities coordinator(s)