

# COURSE SHEET

## *Methods in Teaching Information Technology* *Academic year 2023-2024*

### 1. About the program

1.1	University	University of Pitești
1.2	Faculty	Sciences, Physical Education and Computer Science
1.3	Department	Mathematics-Computer Science
1.4	Field of study	Informatics
1.5	Cycle of studies	Master
1.6	Study Program / Qualification	Advanced techniques for information processing/ Advanced techniques for information processing

### 2. Discipline data

2.1	Name of the discipline					Methods in Teaching Information Technology					
2.2	The holder of the course activities										
2.3	Holder of laboratory activities										
2.4	Year of study	II	2.5	Semester	1	2.6	Type of assessment	C	2.7	Discipline regimen	A

### 3. Estimated total time

3.1	Number of hours per week	2	3.2	of which course	1	3.3	laboratory	1
3.4	Total hours of the curriculum	28	3.5	of which course	14	3.6	laboratory	14
Distribution of the time fund								hours
Study by textbook, course support, bibliography and notes								25
Additional documentation in the library, on specialized electronic platforms and in the field								25
Preparation of seminars/ laboratories, themes, papers, portfolios, essays								25
Tutoring								8
Examination								8
Other activities.....								6
3.7	Total hours of self-study	97						
3.8	Total hours per semester	125						
3.9	Number of credits	5						

### 4. Preconditions (where applicable)

4.1	Curriculum	-
4.2	Skills	Ability to think logically, to analyze, to synthesize

### 5. Conditions (where applicable)

5.1	Conduct of the course	Room with blackboard/whiteboard and video projector
5.2	Conducting the seminar/laboratory	Room with blackboard/whiteboard, video projector and computer equipment

### 6. Acquired specific skills

Professional skills	<ul style="list-style-type: none"> <li>• Operating with notions and methods in teaching information technology;</li> <li>• Development of theoretical concepts and practical methods regarding the process of development and maintenance of computer applications;</li> <li>• Advanced information processing;</li> <li>• Realization of it projects in an interdisciplinary context;</li> <li>• Conceiving, designing and implementing information systems;</li> <li>• Management of information systems.</li> </ul>
Transversal competences	<ul style="list-style-type: none"> <li>• Applying the rules of organized and efficient work, of responsible attitudes towards the scientific-professional field, for the creative capitalization of one's own potential, respecting the principles and norms of professional ethics;</li> <li>• Efficiently carrying out the activities organized in an interdisciplinary team by assuming execution and leadership functions, with the development of empathic capacities of inter-personal communication, networking and collaboration with various groups;</li> <li>• Elaboration of own professional development project; the use of effective methods and techniques for learning, information, research and capacity development, for valuing knowledge, for adapting to the requirements of a dynamic society and for communicating in Romanian and English.</li> </ul>

### 7. The objectives of the discipline

7.1 The general objective of the discipline	The discipline has as general objective the acquisition by students of the basic knowledge, as well as of the advanced methods and techniques regarding the teaching information technology.
7.2 Specific objectives	<p>A. Cognitive objectives</p> <p>Knowledge and understanding of basic knowledge about teaching information technology.</p> <p>B. Procedural objectives</p> <p>1. Highlighting the applicability in other fields and in practical problems of the studied concepts and methods.</p> <p>2. Applying evaluation principles and methods to solve well-defined problems/situations.</p>

	<p>3. Investigating problems from various perspectives, making the transfer of knowledge and skills from one field to another.</p> <p>4. Elaboration of professional papers/homeworks with the use of notions, principles, established methods in the field of teaching information technology.</p> <p><u>C. Attitudinal objectives</u></p> <p>1. Respecting the norms of professional ethics and deontology specific to mathematicians and computer scientists.</p> <p>2. Familiarization with specific roles in a team's network and cooperation in specific activities or teamwork to solve various homework and assignments.</p> <p>3. Using specific methods to develop a personal and professional development plan, along with awareness of the need for continuing education.</p>
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## 8. Contents

8.1. Course		Nr. hours	Teaching methods	Observations Resources used
1,...,7	<p>1. The impact of technology in a changing world. (1 hour)</p> <p>2. Computers and understanding the parts. (1 hour)</p> <p>3. Using the Internet: making the most of the Web's resources. (1 hour)</p> <p>4. Application Software: programs that let us work and play. (1 hour)</p> <p>5. System Software: the operating system, utility programs, and file management. (1 hour)</p> <p>6. Hardware: understanding and evaluating the system. (1 hour)</p> <p>7. Networking: connecting computing devices. (1 hour)</p> <p>8. Managing our digital lifestyle: challenges and ethics. (2 hours)</p> <p>9. Securing our system: protecting our digital data and devices. (2 hours)</p> <p>10. Software programming, databases and information systems, networking and security in the business world. (3 hours)</p>	14	<p>Explanation</p> <p>Description and exemplification</p> <p>Proof</p> <p>Problemization</p> <p>Heuristic</p> <p>Conversation</p> <p>Exercise</p>	Blackboard/whiteboard, Computer, projector
<p><b>Bibliography</b></p> <ol style="list-style-type: none"> <li>George Beekman, Ben Beekman, Digital Planet, Tomorrow's Technology and You, Tenth Edition, Pearson, 2014.</li> <li>Alan Evans, Kendall Martin, Mary Anne Poatsy, Technology in Action Complete, Ed. Pearson, 2020.</li> <li>Richard Fox, Information Technology: An Introduction for Today's Digital World, 2nd Edition, Chapman and Hall/CRC, 2020.</li> <li>Phillip A. Laplante, Encyclopedia of Information Systems and Technology - Two Volumes, CRC Press, 2016.</li> <li>June Jamrich Parsons, New Perspectives on Computer Concepts, Introductory, Cengage, 2018 si 2020.</li> <li><a href="https://www.intelligent.com/best-information-technology-books/">https://www.intelligent.com/best-information-technology-books/</a></li> <li><a href="https://www.shortform.com/best-books/genre/best-information-technology-books-of-all-time">https://www.shortform.com/best-books/genre/best-information-technology-books-of-all-time</a></li> </ol>				
8.2. Applications – Seminar / Laboratory		Nr. hours	Teaching methods	Observations Resources used
1,...,7	<p>1. The impact of technology in a changing world. (1 hour)</p> <p>2. Computers and understanding the parts. (1 hour)</p> <p>3. Using the Internet: making the most of the Web's resources. (1 hour)</p> <p>4. Application Software: programs that let us work and play. (1 hour)</p> <p>5. System Software: the operating system, utility programs, and file management. (1 hour)</p> <p>6. Hardware: understanding and evaluating the system. (1 hour)</p> <p>7. Networking: connecting computing devices. (1 hour)</p> <p>8. Managing our digital lifestyle: challenges and ethics. (2 hours)</p> <p>9. Securing our system: protecting our digital data and devices. (2 hours)</p> <p>10. Software programming, databases and information systems, networking and security in the business world. (3 hours)</p>	14	<p>Explanation</p> <p>Description and exemplification</p> <p>Case study</p> <p>Exercise</p> <p>Problemization</p> <p>Individual themes</p> <p>Group work</p> <p>Debate</p>	Blackboard/whiteboard, Computer, projector
<p><b>Bibliography</b></p> <ol style="list-style-type: none"> <li>George Beekman, Ben Beekman, Digital Planet, Tomorrow's Technology and You, Tenth Edition, Pearson, 2014.</li> <li>Alan Evans, Kendall Martin, Mary Anne Poatsy, Technology in Action Complete, Ed. Pearson, 2020.</li> <li>Richard Fox, Information Technology: An Introduction for Today's Digital World, 2nd Edition, Chapman and Hall/CRC, 2020.</li> <li>Phillip A. Laplante, Encyclopedia of Information Systems and Technology - Two Volumes, CRC Press, 2016.</li> <li>June Jamrich Parsons, New Perspectives on Computer Concepts, Introductory, Cengage, 2018 si 2020.</li> <li><a href="https://www.intelligent.com/best-information-technology-books/">https://www.intelligent.com/best-information-technology-books/</a></li> <li><a href="https://www.shortform.com/best-books/genre/best-information-technology-books-of-all-time">https://www.shortform.com/best-books/genre/best-information-technology-books-of-all-time</a></li> </ol>				

**9. Corroborating the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and employers in the field related to the program**

The competences acquired within the discipline allow the graduates to efficiently use the models and techniques specific to teaching information technology, in solving the requirements related to the practice and research in the field of informatics. The contents are correlated with those of similar disciplines in prestigious universities in the country and abroad and adjusted after discussions with representatives of local IT employers (such as RoWeb, Lisa, Proding, Kepler, Osf, Endava).

**10. Evaluation**

Activity Type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Percent of final grade
10.4 Course	<ul style="list-style-type: none"> <li>•Correctness of assimilated notions</li> <li>•General understanding of the importance of the studied discipline and the connection with the other fundamental disciplines</li> <li>•Logical coherence</li> <li>•The degree of assimilation of the specialized language</li> </ul>	Final written assessment	30%
10.5 Seminar/ Laboratory	<ul style="list-style-type: none"> <li>• Ability to operate with abstract knowledge</li> <li>• Ability to apply in practice</li> <li>• Criteria regarding attitudinal aspects: interest in individual study and seriousness in dealing with problems</li> </ul>	Analysis of student interventions during lab activities	10%
		Project	60%
10.6 Minimum performance standard	<ul style="list-style-type: none"> <li>* Marks of at least 5 for the laboratory activity, for the project and for the final evaluation (50% solving the requirements); final grade at least 5.</li> <li>* Set of minimal knowledge for passing the final exam: <ul style="list-style-type: none"> <li>- Knowledge of the main computational models studied;</li> </ul> </li> <li>Knowledge of ways of adequate application and efficient implementation of these models in solving the proposed problems.</li> </ul>		

Date of completion  
19.09.2023

Course holder  
Prof.univ.dr.habil. Loredana BĂLILESCU

Laboratory holder  
Prof.univ.dr.habil. Loredana BĂLILESCU

Date of approval in the Department  
19.09.2023

Director Department (provider)  
Conf.univ.dr. Doru CONSTANTIN

Director Department (*beneficiary*)  
Conf.univ.dr. Doru CONSTANTIN