



COURSE DESCRIPTION

1. Information about the programme

1.1 Institution of higher education	“Alexandru Ioan Cuza” University of Iași
1.2 Faculty	Faculty of Economics and Business Administration
1.3 Department	Accounting, Information Systems and Statistics
1.4 Field of study	Business Information Systems
1.5 Level	Master
1.6 Study programme/Qualification	Software Development and Business Information Systems

2. Information about the course

2.1 Course name	CLOUD COMPUTING						
2.2 Course coordinator	Associate Professor GREAVU-ȘERBAN Valerică, PhD						
2.3 Seminar coordinator	Constantin Alexandru Ciobanu, PhD						
2.4 Year of study	2	2.5 Semester	1	2.6 Type of assessment	P	2.7 Discipline status*	E

* C - Compulsory / E - Elective

3. Total estimated time (hours allotted to didactic activity per semester)

3.1 Total number of hours per week	3	of which: 3.2 lecture	1	3.3 seminar/lab	2
3.4 Total hours from the curriculum	42	of which: 3.5 lecture	28	3.6 seminar/lab	14
Time distribution					hours
Study of the handbook, coursebook, bibliography and notes					40
Additional research in the library, online and on the field					30
Preparation of seminars/labs, homeworks and projects					50
Tutoriat					15
Examination					3
Other activities					
3.7 Total hours of individual study					138
3.8 Total hours per semester					180
3.9 Number of credits					6

4. Prerequisites (if applicable)

4.1 Curriculum based	<ul style="list-style-type: none">Information Technologies for BusinessLocal Area Networks
4.2 Competence based	<ul style="list-style-type: none">Ability to work with text editors and web browsers

5. Conditions (if applicable)

5.1 For lectures	<ul style="list-style-type: none">Videoprojector
5.2 For seminars/labs	<ul style="list-style-type: none">Internet access



6. Assimilated specific competences

Professional competences	<p>C4 Competence to integrate data, components and services in business systems and applications (1 credit)</p> <p>C5.5 Elaborate a research project that identifies the trends and challenges within the field of cloud computing (1 credit)</p> <p>C6 Competence to manage and develop business processes using IT (3 credits)</p>
Transversal competences	<p>CT1 - The ability to communicate and collaborate in teams of different professionals (0.5 credits)</p> <p>CT3 - Continuous improvement of specific skills and knowledge towards approaching information systems, development of new software technologies and management of information systems (0.5 credits)</p>

7. Course objectives (provided by the assimilated specific competences grid)

7.1 General objectives	<p>Knowledge of the main aspects of developing information systems in cloud computing</p>
7.2 Specific objectives	<ul style="list-style-type: none"> ▪ Having knowledge about the life cycle of the development of complex information systems ▪ Implementation of cloud computing application development stages ▪ Identify security risks and bottlenecks in developing cloud computing platforms

8. Content

8.1	Lecture	Teaching methods	Observations (hours)
1.	Defining features of cloud computing	IC, HC, PSM	3
2.	Cloud computing deployment models	IC, HC, PSM	3
3.	Cloud service models	IC, HC, PSM	3
4.	Technical aspects and security in the cloud	IC, HC, PSM	3
5.	Criticism and future of cloud technologies	IC, HC, PSM	2
IC, HC, PSM = <i>Interactive course, heuristic conversation, problem solving method</i>			

References

- Fehling, C., Leymann, F., Retter, R., Schupeck, W., Arbitter, P., Cloud Computing Patterns: Fundamentals to Design, Build, and Manage Cloud Applications, Springer Science & Business Media, 2014
- Helfert, M., Desprez, F., Ferguson, D., Leymann, F., Cloud Computing and Services Science: Third International Conference, CLOSER 2013, Aachen, Germany, May 8-10, 2013, Revised Selected Papers, Springer, 2014



- Kavis, M., Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS), John Wiley & Sons, 2014
- Li, X., Qiu, J., Cloud Computing for Data-Intensive Applications, Springer, 2014
- Mahmood, Z., Cloud Computing: Challenges, Limitations and R&D Solutions, Springer, 2014
- Mohapatra, S., Lokhande, L., Cloud Computing and ROI: A New Framework for IT Strategy, Springer, 2014
- Noor, T., Sheng, Q., Bouguettaya, A., Trust Management in Cloud Services, Springer, 2014
- Pop, F., Potop-Butucaru, M., Adaptive Resource Management and Scheduling for Cloud Computing: First International Workshop, ARMS-CC 2014, held in Conjunction with ACM Symposium on Principles of Distributed Computing, PODC 2014, Paris, France, July 15, 2014, Revised Selected Papers, Springer, 2014
- Uden, L., Sinclair, J., Tao, Y.H., Liberona, D., Learning Technology for Education in Cloud - MOOC and Big Data: Third International Workshop, LTEC 2014, Santiago, Chile, September 2-5, 2014. Proceedings, Springer, 2014
- Villari, M., Zimmermann, W., Lau, K.K., Service-Oriented and Cloud Computing: Third European Conference, ESOC 2014, Manchester, UK, September 2-4, 2014, Proceedings, Springer, 2014
- Zhao, L., Sakr, S., Liu, A., Bouguettaya, A., Cloud Data Management, Springer, 2014

Principal references:

- Chandrasekaran, K., Essentials of Cloud Computing, CRC Press, 2014
- Greavu-Șerban, V., Cloud Computing: Caracteristici și Modele, Editura ASE, București, 2015

Additional references :

- Yeluri, R., Castro-Leon, E., Building the Infrastructure for Cloud Security: A Solutions View, Apress Open, 2014

8.2	Seminar / Lab	Teaching methods	Observations (hours)
1.	Methods of accessing services provided by Cloud platforms	IL, D, PA	8
2.	The main cloud functionalities in IaaS, PaaS, SaaS	IL, D, PA	8
3.	Introduction to cloud application development	IL, D, PA	8
4.	Practical aspects of security in the cloud	IL, D, PA	4
<i>PI, D, AP = Interactive Lecture, Demonstration, Practical Apps</i>			

References

- Official Microsoft Learning Product, Introduction to Office 365 (40041A), 2013
- Official Microsoft Learning Product, Microsoft Azure Fundamentals (10979C), 2016

Web resources

- Azure Portal - <https://azure.microsoft.com>
- Google CloudPlatform - <https://cloud.google.com/>
- Amazon Web Services - <https://aws.amazon.com/>

9. Corroborating the content of the discipline with the expectations of community representatives, professional associations and representative employers in the field of the program

Even if it has a recent history, cloud computing has an exponential development as a model for the development of information and service systems. The three major cloud providers have many partner companies in Iași and Romania, being permanently looking for specialists in the field.

**10. Assessment**

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade (%)
10.4 Course	<ul style="list-style-type: none">Course theme presentation (team)Thematic essay (individual)	Summative evaluation	<ul style="list-style-type: none">30%20%
10.5 Seminar/ Laboratory	<ul style="list-style-type: none">Project (team)	Formative evaluation	<ul style="list-style-type: none">50%
10.6 Minimum performance standards			
<ul style="list-style-type: none">Ability to integrate in the analysis, design, implementation, and maintenance teams of private, public or hybrid cloud services within local, national, or multinational institutions, organizations, and companies.Obtaining 5 points (out of 10) both for the evaluation along the semester (seminar) and for the final evaluation (exam).			

Date of completion
27.09.2023

Lecture coordinator
Assoc. prof. **Greavu-Șerban Valerică**,
PhD

Seminar coordinator
Constantin Alexandru Ciobanu,
PhD

Date of approval within department

Head of department
Prof. **Asandului Mircea**, *PhD*