COURSE GUIDE 2019-2020

Dean,
Prof. PhD. Eng. Daniela Tărniceriu

1. Program info

1.1 Higher education institution	"Gheorghe Asachi" Technical University of Iaşi
1.2 Faculty / Department	Electronics, Telecommunications and Information Technology
1.3 Department	Telecommunications and Information Technology
1.4 Field	Electronics, Telecommunications and Informational Technologies Engineering
1.5 Study level	Bachelor
1.6 Study program / Qualification	Telecommunication Technologies and Systems / Engineer

2. Course info

2.1 Course name		**Computer Programming and Programming Languages 1** EBIF103					
2.2 Course organizer (lecturer)		Prof. PhD. Eng. Adriana Sîrbu					
2.3 Teaching assistants		Lecturer PhD. Eng. Iolanda Elena Alecsandrescu					
2.4 Year of study	1	2.5 Semester	1	2.6 Assessement	Exam	2.7 Category	DI

3. Estimated total time (hours per semester for teaching activities)

3.1 Number of hours per week	4	3.2 lecture	2	3.3 seminar/laboratory	2
3.4 Total number of hours in curricula	56	3.5 lecture	28	3.6 seminar/laboratory	28

Time distribution	hours
Textbook, course support, references and course notes study	20
Library, electronic platforms and on site documentation	9
Seminar/laboratory preparation, homework, reports, portfolios and essays	20
Tutoring	8
Assessment	2
Other activities	5

3.7 Total individual study hours	64
3.9 Total hours per semester	120
3. 10 Number of credit points	5

4. Prerequisites (where applicable)

4.1 curricula type	None
4.2 competence type	None

5. Infrastructure (where applicable)

5.1. for lectures	• Computer, videoprojector, whiteboard
5.2. for laboratories	• Computer network, videoprojector, whiteboard • Software - DevCpp

6. Specific competences

Professional competences	• To know the structure and operation of a computing system ; • To master algorithm design techniques ; • To understand the internal representation of information in computing systems ; • To master basic elements of C language programming: o C Program Structure o Data types o Declarations o Operators and expressions o Input/Output Operations o C Language Statements
Transversal competences	• Being able to efficiently use information resources, communication and assisted professional formation resources, both in Romanian and English language. • Demonstrate preoccupation for professional perfection by means of training of critical reasoning, envisaging lifetime learning and education.

7. Course targets (as resulting from **6. Specific competences** table)

7.1 Course main target	- Development of professional competencies in the field of design, implementation and testing of software applications
7.2 Course specific targets	- Critical understanding, and interpret theoretical, methodological and practical approaches specific for the design of software applications - Demonstrate familiarity with major algorithms and data structures. - Write simple programs in C language

8. Contents

8. 1 Lectures	**Teaching methods**	**Notes**
1. Computer architecture 1.1. Hardware 1.2.Software – operating system level, programming languagesn, system level, application programs level. 1.3. Programming languages .	Combined: - lecture method - video projector usage	2 lectures
2. Algorithm design 2.1. Structured programming. 2.2. Algorithms description : logic diagrams, pseudocode. 2.3. Control structures : sequence, decision, selection, while - cycle, do - while cycle, for-cycle. 2.4. Data types. 2.5. Top-down approach: procedures and functions..	- explanation - debates, - case studies -connections with the content of topics from connected disciplines, previous presented information from the current discipline or practical applications of the investigated problem.	3 lectures
3. Internal representation of information in computer systems 3.1. Representation of instructions. 3.2. Representation of numerical data. 3.3. Representation of alphanumerical data. 3.4. Arithmetical operation and calculus precision		1 lecture
4. Introduction to C programming . 4.1. The structure of a program, vocabulary, lexical units 4.2. Data types 4.3. Expressions 4.4. Standard Input/Output operations 4.5.Simple statements 4.5.*if* statement 4.6. Cyclic statements : *while, do while, for*		8 lectures

References

1. A. Sîrbu – Limbajul C – Tehnici de programare, Editura "Gh. Asachi" Iaşi, 2000.
2. Negrescu, L. - Limbajele C si C++ pentru începători, vol. I şi II, Colecţia Microinformatica, Editura Romanian Software, Cluj, 1996.
3. Schildt, H. C++ Manual complet, Editura Teora 1997.
4. Cristea V.,s.a. - Limbajul C standard, Editura Teora, Bucuresti, 1992.
5. http:www.etti.tuiasi.ro/pclp

8. 2 Laboratory	Teaching methods	Notes
1. Computer architecture. Functional Units. (2h)	Study and usage of the Raptor software Solving applications using Dev C++ IDE Exercises Discutions	
2. Computer Networks. (2h)		
3. Operating Systems – DOS Commands. (2h)		
4. File Manager Programs. (2h)		
5. Algorithm and Structured Programming. (2h)		
6. Internal representation of data. Calculus Precision + Test (2h)		
7. Integrated Development Environment – General Presentation. (2h)		
8. Console I/O. Characters and Strings. (2h)		
9. Standard I/O.(2h)		
10. Expressions in C. (2h)		
11. Decisional Statements (if + switch). (2h)		
12. Cyclic Statements I (while + do-while). (2h)		
13. Cyclic Statements II (for). (2h)		
14. Test. (2h)		

References

1. A. Sîrbu – Limbajul C – Tehnici de programare, Editura "Gh. Asachi" Iaşi, 2000.
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9. Course contents corroboration with the expectations of the epistemic community representatives, professional associations and relevant employers in the field of the program

During the planning of the content of the discipline and of the teaching/examination methods teachers have consulted both similar specialists from the Romanian academic community and those from abroad (involved in Erasmus/Socrates programs). In the same time one takes into account the opinions and expectations of the most representative Romanian industrial entrepreneurs with whom our faculty has constant collaborations. The objectives of the discipline are in perfect concordance with the curriculum, conveying information and creating necessary skills for the future specialists in the field of electronics, telecommunications and information technology. The syllabus also considered the integration of the discipline in the curriculum of the specializations Applied Electronics and Intelligent Systems, Microelectronics and Telecommunications Systems and Technologies, in concordance with curricula of prestigious universities in Romania and abroad.

10. Assessment

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Percentage of final grade
10.4 Lectures	- Degree of assimilation of the specialty language - Knowledge correctness and completeness - Logical coherence and adequate usage of specific concepts	Solving 3 problems – C language implementation First problem, 50%, second problem 30% and last problem 20% of the final grade.	60 % (minim 5)

10.5 Seminar/laboratory	-Capacity to operate with assimilated knowledge -Quality of the solutions of the problems	Continuous evaluation Written test from Algorithm Design chapter (problem solving) – 7th week, 50% of the final grade	40 % (minim 5)
	-Frequency and pertinence of oral interventions - Quality of home works - Criteria regarding attitude aspects: conscientiousness, inters for individual study		
10.6 Minimum performance standard			
• Knowledge of fundamental theory elements, solving simple problems, implementation, debugging and testing of simple programs in C language			

Completion date	Course organizer signature,	Teaching assistant signature,
09.09.2019	Prof. PhD. Eng. Adriana Sîrbu	Lecturer PhD. Eng. Iolanda Elena Alecsandrescu

Department approval date

16. SEP. 2019

Department director signature

Assoc.Prof. PhD. Eng. Luminița Scripcariu