COURSE GUIDE

Dean, Prof. 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 Technologies
1.4 Field	Electronic Engineering, Telecommunications and Information Technology
1.5 Study level	Bachelor's Degree Studies
1.6 Study program / Qualification	Telecommunications Systems and Technologies

2. Course info

2.1 Course name: **Internet of Things**						Code: EDOS418T	
2.2 Course organizer (lecturer)		PhD Lecturer Daniel Matasaru					
2.3 Teaching assistants		PhD Lecturer Daniel Matasaru					
2.4 Year of study	4	2.5 Semester	2	2.6 Assessement	C	2.7 Type of subject	ED

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

3.1 Number of hours per week	5	3.2 lecture	3	3.3 seminar/laboratory	2
3.4 Total number of hours in curricula	70	3.5 lecture	42	3.6 seminar/laboratory	28

Time distribution	hours
Textbook, course support, references and course notes study	28
Library, electronic platforms and on site documentation	14
Seminar/laboratory preparation, homework, reports, portfolios and essays	14
Tutoring	4
Assessment	10
Other activities	16

3.7 Total individual study hours	86
3.9 Total hours per semester	156
3. 10 Number of credit points	3

4. Prerequisites (where applicable)

4.1 curricula type	
4.2 competence type	

5. Infrastructure (where applicable)

5.1. for lectures	Lectures will be held with logistic support (computer, projector, intranet access)
5.2. for laboratories	Laboratories must be completed entirely, there is a bonus system for excellence. Participation in the final exam is conditioned by full completion of labs and project achievement and presentation.

6. Specific competences	
Professional competences	• Cognitive competences: • Technical competences: • Professional competences
Transversal competences	✓ Efficient use of informational sources and communication resources and assisted professional formation through the use of Internet of Things services ✓ Training of analytical and synthetical skills for professional enhancement all life long ✓ Ability to work in an international/multicultural private companies, eventually being part of remote located teams
7. Course targets (as resulting from **6. Specific competences** table)	
7.1 Course main target	Deep knowledge of thehourstical and practical developments in IoT fundamentals.
7.2 Course specific targets	✓Getting students acquainted to Internet of Things essentials (browsers, applications, protocols) ✓Student awareness for advantages of new web technologies and developing skills for Internet Of Things applications and services in order to build a strong succesfull professional career in the field of telecom engineering.

8. Contents

8. 1 Lectures	**Teaching methods**	**Notes**
Introduction	Case study Explanation Giving examples Exercises Debate Connections with real life situations	3 hours
IoT Networks: Smart Things		6 hours
Connection of Smart Objects		9 hours
Using IP as Network Layer for IoT		3 hours
plication Protocols in IoT		6 hours
Data Analytics for IoT		6 hours
Security in the Internet of Things		3 hours
IoT applied in Industry: manufacturing, utilities,smart cities,transportation, public safety, data mining		6 hours
8. 2 Laboratories	**Teaching methods**	**Notes**
IoT Impact	Case study Explanation Giving examples Exercises Debate Connections with real life situations	2 hours
IoT Architectures		2 hours
Sensors, actuators and smart objects		2 hours
IoT Technologies		2 hours
Optimization of IP for IoT		2 hours

SCADA Protocol Translation		2 hours
Machine Learning overview		2 hours
Security issues for IoT		2 hours
Industrial Automation Control Protocols		2 hours
IoT Architectures for Oil and Gas		2 hours
Smart City IoT Architecture		2 hours
Smart Parking Use Cases		2 hours
IoT Technologies for Transportation		2 hours
School Bus Safety Case Study		2 hours
Bibliography (selection)		
1. IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things, D. Hanes, G. Salgueiro, P. Grossetete, R. Barton and J. Henry, Cisco Press, 2017		

10. Assessment

Activity type	**10.1 Assessment criteria**	**10.2 Assessment methods**	**10.3 Percentage of final grade**
10.4 Lectures	Degree of assimilationof a technical vocabulary Corectness and completness of knowledge Logical coherence and proper use of knowledge	Mixt examination: (50%); a) problem solving; b) traditional (written), all sources accepted; 2. Knowledge test - (50%); a) Closed and open questions test; b) traditional (written), all sources accepted;	50%
10.5 Laboratory	Ability to use knowledge in order to design a personal webpage Creativity in problem solving Autenticity	Project	20%
	Frequency and sense of verbal interventions , Quality of work	Continuous evaluation	30%

	-Criteria for atittude towards the lectures and content (conscientiousness, interest)		

10.6 Minimum performance standard
Basic knowledge for designing a web page.

Completion date:
10.09.2019

Course organizer signature,
PhD Lect. Matasaru Petre-Daniel

Teaching assistant signature,
PhD Lect. Matasaru Petre-Daniel

Department approval date,

16. SEP. 2019

Department director signature,
Conf. Dr.ing. LUMINITA SCRIPCARIU