6 Domain: Power Engineering

6.1 Master title: *Energy Engineering*

a) Faculty of Engineering in Foreign Languages in collaboration with Power Engineering Faculty

b) Short description and main objectives:

The master program Energy Engineering is organized and coordinated by the Power Engineering (Energetics) Faculty and the Faculty of Engineering in Foreign Languages (FILS) from the University Politehnica of Bucharest (UPB), with support and participation of the following faculties from UPB: Applied Chemistry and Materials Science, Mechanical Engineering and Mechatronics, Electronics, Telecommunications and Information Technology. The focus of the program is to produce technically versatile graduates capable to tackle independently new problems and today challenges of scientific research, industrial applications and management in various fields of energy engineering, including:
(i) flow, heat and mass transfer phenomena in energetic systems,
(ii) material science for energy applications and the environmental impact of energy production.

c) Other information (double degree, incoming Erasmus students, partnership to industry/companies, possibility to develop master thesis related to industry, etc)

- ✓ **In cooperation with T.U. Darmstadt (Germany).** The master program Energy Engineering is organized and planned to be compatible, in curriculum and scientific research directions, with the master program Energy Science and Engineering from T.U.Darmstadt, Germany.
- ✓ This program yearly receives incoming Erasmus students for one semester or one entire year.

d) Website: http://ing.pub.ro/wp-content/uploads/2014/11/Flyier-Master-Energy-Engineering.pdf

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f) Curricula:

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Year	Sem	Subject name	Weekly number of hours				Evaluation form (E/C)	ECTS
			Lecture	Tutorial	Labwork	Project		
1	1	Renewable Energies, Energy Scenarios and Climate Protection	2	1	0	0	C	4
1	1	Energy Technologies in Mechanical Engineering	2	0	1	0	E	4
1	1	Chemistry and Material Science for Energy Engineering	2	0	2	0	E	4
1	1	Energy Finance	2	1	0	0	C	4
1	1	Continuum Mechanics and Thermodynamics	2	1	0	0	C	4
1	1	Scientific research	0	0	0	12	C	10
1	2	Modelling turbulent flows and heat transfer	2	0	2	0	E	4
1	2	Energy Technologies in Buildings –Smart Buildings	2	0	1	0	E	4
1	2	Energy systems I (classical energy and low emissions)	2	0	1	0	E	4
1	2	Energy Supply and Environmental Protection	2	0	1	0	E	4
1	2	Energy systems II (regenerative energy)	1	2	0	0	C	4
1	2	Environmental and economical aspects of energy conversion	1	2	0	0	C	4
1	2	Electrical Engineering and Information Technologies	1	2	0	0	C	4
1	2	Interdisciplinary research project	0	0	0	12	C	10
2	3	Electrochemistry	2	0	1	0	E	4
2	3	Chemical kinetics	2	0	1	0	E	4
2	3	Electro-chemistry in energy applications –converter devices	2	0	1	0	E	4
2	3	Material science of thin films and Rheology	2	0	2	0	E	4
2	3	Electro-chemistry in energy applications –storage devices	2	0	1	0	C	4
2	3	Principles of Carbon Capture and Storage	2	0	1	0	C	4
2	3	Scientific research	0	0	0	12	C	10
2	4	Scientific research, practice and	0	0	0	27	C	28

		dissertation elaboration						
2	4	Ethics	1	0	0			2