Universitatea Naţională de Ştiinţă şi Tehnologie Politehnica Bucureşti
Facultatea de Electronică, Telecomunicaţii şi
Tehnologia Informaţiei

COURSE DESCRIPTION

1. Program identification information

1.1 Higher education institution	**National University of Science and Technology Politehnica Bucharest**
1.2 Faculty	**Electronics, Telecommunications and Information Technology**
1.3 Department	
1.4 Domain of studies	Electronic Engineering, Telecommunications and Information Technology
1.5 Cycle of studies	Bachelor/Undergraduate
1.6 Programme of studies	Applied Electronics

2. Date despre disciplină

2.1 Course name (ro) (en)				Bazele electrotehnicii 2 Fundamentals of Electrical Engineering 2			
2.2 Course Lecturer				Conf. dr. ing. Iosif Vasile Nemoianu			
2.3 Instructor for practical activities				Ş.l. dr. ing. Radu Mircea Ciuceanu			
2.4 Year of studies	1	2.5 Semester	II	2.6. Evaluation type	E	2.7 Course regime	Ob
2.8 Course type		D	2.9 Course code	04.D.02.O.012		2.10 Tipul de notare	Nota

3. Total estimated time (hours per semester for academic activities)

3.1 Number of hours per week	3	Out of which: 3.2 course	2.00	3.3 seminary/laboratory	1
3.4 Total hours in the curricula	42.00	Out of which: 3.5 course	28	3.6 seminary/laboratory	14
Distribution of time:					hours
Study according to the manual, course support, bibliography and hand notes Supplemental documentation (library, electronic access resources, in the field, etc) Preparation for practical activities, homework, essays, portfolios, etc.					52
Tutoring					0
Examinations					6
Other activities (if any):					0

3.7 Total hours of individual study	58.00
3.8 Total hours per semester	100
3.9 Number of ECTS credit points	4

4. Prerequisites (if applicable) (where applicable)

4.1 Curriculum	
4.2 Results of learning	

5. Necessary conditions for the optimal development of teaching activities (where applicable)

5.1 Course	Board and projector
5.2 Seminary/ Laboratory/Project	Board and projector

6. General objective *(Reffering to the teachers' intentions for students and to what the students will be thought during the course. It offers an idea on the position of course in the scientific domain, as well as the role it has for the study programme. The course topics, the justification of including the course in the currcula of the study programme, etc. will be described in a general manner)*

7. Competences *(Proven capacity to use knowledge, aptitudes and personal, social and/or methodological abilities in work or study situations and for personal and proffesional growth. They refflect the empolyers requirements.)*

Specific Competences	
Transversal (General) Competences	

8. Learning outcomes *(Synthetic descriptions for what a student will be capable of doing or showing at the completion of a course. The learning outcomes reflect the student's acomplishments and to a lesser extent the teachers' intentions. The learning outcomes inform the students of what is expected from them with respect to performance and to obtain the desired grades and ECTS points. They are defined in concise terms, using verbs similar to the examples below and indicate what will be required for evaluation. The learning outcomes will be formulated so that the correlation with the competences defined in section 7 is highlighted.)*

Knowledge	*The result of knowledge aquisition through learning. The knowledge represents the totality of facts, priciples, theories and practices for a given work or study field. They can be theoretical and/or factual.*
Skills	*The capacity to apply the knowledge and use the know-how for completing tasks and solving problems. The skills are described as being cognitive (requiring the use of logical, intuitive and creative thinking) or practical (implying manual dexterity and the use of methods, materials, tools and intrumentation).*
Responsability and autonomy	*The student's capacity to autonomously and responsably apply their knowledge and skills.*

9. Teaching techniques *(Student centric techniques will be considered. The means for students to participate in defining their own study path, the identification of eventual fallbacks and the remedial measures that will be adopted in those cases will be described.)*

10. Contents

Bibliography:
Nemoianu, Iosif Vasile, "Bazele Electrotehnicii 2", suport de curs electronic, *https://curs.upb.ro/2024/course/view.php?id=7974*
2. Nemoianu, I. V., Maricaru, M., Ciuceanu, R.M., Culegere de probleme rezolvate de câmp electromagnetic, Editura Matrix Rom, Bucureşti 2018
3. G. Ionescu, Electromagnétisme, Printech 2007
4. G. Ionescu, Analyse et modélisation des champs, Printech 2007
5. J.A. Svoboda, Electric Circuit Study Applets
6. J.A. Svoboda, Interactive Examples & Exercises
7. M.D. Filipovic, Understanding Electronics Components
8. Amanogawa & Semchip, Circuit Applets (Power components for sinusoidal signal. Parallel and series resonant circuits)
9. The Nuffield Foundation, Electric Circuits & Fields
10. Electrotechnique - Electrotechnique (sitelec.org) : http://sitelec.free.fr/cours.htm ;
11. CEI, The International System of Units and the IEC
12. Al. Timotin, V. Hortopan, M. Preda, Fl. Manea, Lecţii de Bazele Electrotehnicii, Editura Didactică şi Pedagogică, Bucureşti, 1979

11. Evaluation

Activity type	11.1 Evaluation criteria	11.2 Evaluation methods	11.3 Percentage of final grade
11.4 Course	verification test during the semester	The written presentation of theoretical subjects and their applications	40%
	final examination	The written presentation of theoretical subjects and their applications	40%
11.5 Seminary/laboratory/project	the assessment of the activity at the seminar and the topics for individual study	written	20%
11.6 Passing conditions			
Achieving at least 50% of the total score			

12. Corroborate the content of the course with the expectations of representatives of employers and representative professional associations in the field of the program, as well as with the current state of knowledge in the scientific field approached and practices in higher education institutions in the European Higher Education Area (EHEA)

Identifying roles and responsibilities within a multidisciplinary team and applying relationship techniques and effective work within the team.

Respecting different cultures, customs, and professional technical methods and procedures inherent to an industry with many differences based on locality, region, country, or continent.

Date	Course lecturer	Instructor(s) for practical activities
21.09.2026	Conf. dr. ing. Iosif Vasile Nemoianu	Ş.l. dr. ing. Radu Mircea Ciuceanu
		Ş.l. dr. ing. Lavinia Maria Bobaru

Date of department approval	Head of department

Date of approval in the Faculty Council	Dean
22.09.2026	Prof. Dr. Mihnea Udrea