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	**Electronic Devices, Circuits and Architectures**
1.4 Domain of studies	Electronic Engineering, Telecommunications and Information Technology
1.5 Cycle of studies	Bachelor/Undergraduate
1.6 Programme of studies	Microelectronics, Optoelectronics and Nanotechnologies

2. Date despre disciplină

2.1 Course name (ro) (en)				Practică Practical training			
2.2 Course Lecturer				NA			
2.3 Instructor for practical activities				NA			
2.4 Year of studies	3	2.5 Semester	2	2.6. Evaluation type	V	2.7 Course regime	Ob
2.8 Course type		DS	2.9 Course code	04.D.06.O.009		2.10 Tipul de notare	Nota

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

3.1 Number of hours per week	0	Out of which: 3.2 course	0.00	3.3 seminary/laboratory	0
3.4 Total hours in the curricula	0.00	Out of which: 3.5 course	0	3.6 seminary/laboratory	0
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.					0
Tutoring					0
Examinations					0
Other activities (if any):					0

3.7 Total hours of individual study	0.00
3.8 Total hours per semester	0
3.9 Number of ECTS credit points	8

4. Prerequisites (if applicable) (where applicable)

4.1 Curriculum	Not applicable
4.2 Results of learning	Not applicable

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

5.1 Course	Not applicable

5.2 Seminary/ Laboratory/Project	Not applicable

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)*

The objective of the practical training activity is to develop work skills for students in higher technical education, with the aim of increasing the level of qualification and facilitating faster insertion into the labor market. It targets aligning the professional training system with the dynamics of the labor market, through practice carried out at economic operators, agencies, and research units whose field of activity is applied electronics and information engineering.

Students will develop the ability to conduct a bibliographic/desk research on a given topic, will consolidate professional communication and teamwork skills, and will develop their capacity to work in a planned manner by managing time efficiently. The practice is designed as a comprehensive approach to the stages of designing, building, and testing a product specific to applied electronics and information engineering.

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	C1 - Use of fundamental elements related to electronic devices, circuits, systems, instrumentation, and technology C2 - Application of basic methods for signal acquisition and processing C3 - Application of basic knowledge, concepts, and methods regarding computer system architecture, microprocessors, microcontrollers, and programming languages and techniques C4 - Designing and using low-complexity hardware and software applications specific to applied electronics and information engineering C5 - Application of basic knowledge, concepts, and methods from: power electronics, automatic systems, electrical energy management, electromagnetic compatibility C6 - Solving technological problems in the fields of applied electronics and information engineering
Transversal (General) Competences	CT1 - Methodical analysis of problems encountered in activity, identifying the elements for which established solutions exist, thus ensuring the fulfillment of professional tasks CT2 - Defining activities by stages and assigning them to subordinates with complete explanation of duties, according to hierarchical levels, ensuring efficient information exchange and interpersonal communication CT3 - Adapting to new technologies, professional and personal development through continuing education, using printed documentation sources, specialized software, and electronic resources in Romanian and at least one international language

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.* · **List** the most important stages that have marked the development of the field. · **Define** domain-specific concepts. · **Describe/classify** concepts/processes/phenomena/structures.
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).* · **Selects** and **groups** relevant information in a given context. · **Works** productively **in a team.** · **Develops a scientific text.** · **Experimentally verifies identified solutions.** · **Solves** practical applications. · **Appropriately interprets** the obtained results. · **Analyzes and compares** the obtained results**.** · **Identifies solutions** and **drafts** resolution plans/projects. · **Formulates conclusions for the experiments performed.** · **Justifies** the identified solutions/modes of resolution.
Responsability and autonomy	*The student's capacity to autonomously and responsably apply their knowledge and skills.* · **Selects** appropriate bibliographic sources and analyzes them. · **Respects academic ethics principles,** correctly citing the bibliographic sources used. · **Demonstrates** receptiveness to new learning contexts. · **Shows collaboration** with other colleagues and teaching staff/practice coordinator in carrying out activities **Demonstrates autonomy** in organizing the learning situation/context or the problem situation to be solved **Promotes/contributes with new solutions pertinent to the field of specialization** to improve the quality of social life. **Becomes aware of the value of one's contribution in engineering** for identifying viable/sustainable solutions to solve problems in social and economic life (social responsibility). **Applies principles of professional ethics/deontology in analyzing the technological impact of proposed solutions** in the field of specialization on the environment. **Analyzes and leverages business opportunities**/entrepreneurial development in the field of specialization. **Demonstrates management skills** in real-life situations (managing time, collaboration vs. conflict).

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.)*

Not applicable

10. Contents

Bibliography:

11. Evaluation

Activity type	11.1 Evaluation criteria	11.2 Evaluation methods	11.3 Percentage of final grade
11.4 Course			
11.5 Seminary/laboratory/project	attendance at all practical training sessions	oral exam	50
	participation in the practical training colloquium		50
11.6 Passing conditions			
attendance at all practical training sessions, completion of the practical training logbook, and participation in the practical training colloquium			

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)

Industry has a significant demand for qualified engineers, specialized in applied electronics and information engineering, and with a solid foundation in electronics, systems, and information technology, so that the pace of developing new hardware products and software applications can be maintained.

Validation of students' training is given by their integration into the industrial/academic/research environment, with practice being the element that facilitates this.

In the context of current technological progress of electronic devices, the targeted fields of activity are practically unlimited: industrial electronics, automation, medical electronics, artificial intelligence, information technologies, image processing, military, geological, security applications, robotics (human–machine interface systems) and many others.

Thus, graduates are ensured competencies appropriate to the current qualification needs and a modern, high-quality and competitive scientific and technical training, which allows rapid employment after graduation, the practical activity being perfectly aligned with the policy of the University Politehnica of Bucharest, both in terms of content and structure, as well as in terms of skills and the international openness offered to students.

Date	Course lecturer	Instructor(s) for practical activities
25.09.2025	NA	NA

Date of department approval	Head of department
26.09.2025	Prof. Dr. Claudius Dan

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Date of approval in the Faculty Council	Dean
26.09.2025	Prof. Dr. Mihnea Udrea