# SYLLABUS

## 1. Information about the program

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| **1.1** Higher education institution | Universitatea Politehnica Timișoara |
| **1.2** Faculty[1]/Department[2] | ELECTRONICS, TELECOMUNICATON AND INFORMATION TECHNOLOGIES |
| **1.3** Field of study(name/code[3]) | ELECTRONIC ENGINEERING, TELECOMUNICATION AND INFORMATION TECHNOLOGIES / 20/20/10 |
| **1.4** Study cycle | Master |
| **1.5** Study program (name/code/qualification) | Automotive Electronic Systems /20/20/10 / 2152 |

## 2. Information about discipline

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|---|---|---|---|---|---|---|---|
| **2.1a** Name of discipline/The educational classe[4] | Optimization of Electronic Products for Series Production | | | | | | |
| **2.1b** Name of discipline in Romanian | | | | | | | |
| **2.2** Coordinator (holder) of course activities | Adrian Avram | | | | | | |
| **2.3** Coordinator (holder) of applied activities[5] | Adrian Avram | | | | | | |
| **2.4** Year of study[6] | 2 | **2.5** Semester | 3 | **2.6** Type of evaluation | E | **2.7** Regime of discipline[7] | DOP |

## 3. Total estimated time (direct activities (fully assisted), partially assisted activities and unassisted activities[8])

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **3.1** Number of hours fully assisted/week | 2,of which: | course | 1 | seminar/laboratory/project | | | 1 |
| **3.1*** Total number of hours fully assisted/sem. | 28 ,of which: | course | 14 | seminar/laboratory/project | | | 14 |
| **3.2** Number of on-line hours fully assisted/sem | 0 ,of which: | course | 0 | seminar/laboratory/project | | | 0 |
| **3.3** Number of hours partially assisted/week | ,of which: | project, research | | training | | hours designing M.A. dissertation | |
| **3.3*** Number of hours partially assisted/ semester | ,of which: | project of research | | training | | hours designing M.A. dissertation | |
| **3.4** Number of hours of unassisted activities/ week | ,of which: | Additional documentation in the library, on specialized electronic platforms, and on the field | | | | | |
| | | Study using a manual, course materials, bibliography and lecture notes | | | | | |
| | | Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays | | | | | |
| **3.4*** Total number of hours of unasssited asctivities/ semester | ,of which: | Additional documentation in the library, on specialized electronic platforms, and on the field | | | | | |
| | | Study using a manual, course materials, bibliography and lecture notes | | | | | |
| | | Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays | | | | | |
| **3.5 Total hrs./week[9]** | 2 | | | | | | |
| **3.5* Total hrs./semester** | 28 | | | | | | |
| **3.6 No. of credits** | 6 | | | | | | |

## 4. Prerequisites(where applicable)

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| **4.1** Curriculum | • KNOWLEDGE OF CONSTRUCTION AND TECHNOLOGY OF ELECTRONIC EQUIPMENTS |
| **4.2** Learning outcomes | • - |

## 5. Conditions(where applicable)

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| **5.1** of the course | • Video-projector, Internet connection |
| **5.2** to conduct practical activities | • PC's with Software Tools, Electronic Basic Tools |

**6. Learning outcomes** acquired through this discipline

| Knowledge | • C2. The student/graduate identifies connections between electronic engineering and other fields (management, social sciences, software engineering).<br>• C3. The student/graduate explains advanced principles and methodologies for integrating hardware and software technologies into complex engineering systems.<br>• |
|---|---|
| Skills | • A1. The student/graduate communicates results professionally, in the form of reports and scientific papers.<br>• A2. The student/graduate proposes and implements innovative solutions to technical problems in interdisciplinary contexts.<br>• A3. The student/graduate uses hardware and software communication tools and collaborates to solve complex and multidisciplinary tasks. |
| Responsibility and autonomy | • RA1. The student/graduate assumes responsibility for adhering to ethical standards and professional integrity.<br>• RA2. The student/graduate participates in the dissemination of knowledge through research activities and scientific communication.<br>• RA3. The student/graduate works effectively in multidisciplinary teams, promoting collaboration and shared responsibility in achieving objectives. |

**7. Objectives of the discipline** (based on the grid of learning outcomes acquired)

- FAMILIARIZATION WITH TERMS THAT ANDERLIE THE MANUFACTURING ENGINEERING IN THE AUTOMOTIVE FIELD
- TO UNDERSTAND THE BASIC CONCEPTS OF MANUFACTURING ENGINEERING
- TO CORRECTLY USE OF THE SPECIALIZED TERMS AND THE SPECIFIC METHODOLOGY
- TO ARGUE THE SOLUTION THAT HAVE BEEN CHOSEN .

**8. Content**

| 8.1 Course | Number of hours | Of which online | Teaching methods |
|---|---|---|---|
| ELABORATION OF TECHNOLOGICAL MANUFACTURING PROCESSES | 8 | 0 | Theoretical presentation with questions and discussions, correlating concepts with real-world applications. |
| DESIGN AND OPERATION OF MANUFACTURING EQUIPMENTS | 4 | 0 | |
| PLANNING, MANAGEMENT AND QUALITY ASSURANCE OF MANUFACTURING PROCESSES | 4 | 0 | |
| ASSOCIATING KNOLEDGE, PRINCIPLES AND METHODS FROM THE TECHNICAL SCIENCES OF THE SYLLABUS TO SOLVE SPECIFIC TASKS | 12 | 0 | |
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Bibliography[10]. Leoveanu Ioan Sorin, OPTIMIZAREA PROCESELOR TEHNOLOGICE, Ed.LuxLibris, 2016
 2. Ecodesign-ul dispozitivelor electronice – Andrej Sarjas
3. Managementul datelor produsului
4. A. Diamandescu, M. Sudacevschi, Optimizarea calitatii productiei in raport cu costurile implicate.
5. STANDARDE

| 8.2 Applied activities[11] | Number of hours | Of which online | Teaching methods |
|---|---|---|---|
| CASE STUDIES | 10 | | CASE STUDIES |
| CLASSICAL METHODS FOR OPTIMIZING TECHNOLOGICAL PROCESSES | 4 | | |
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Bibliography[12]1. Leoveanu Ioan Sorin, OPTIMIZAREA PROCESELOR TEHNOLOGICE, Ed.LuxLibris, 2016

## 9. Evaluation

| Type of activity | 9.1 Evaluation criteria[13] | 9.2 Evaluation methods | 9.3 Share of the final grade |
|---|---|---|---|
| **9.4** Course | Verification of theoretical knowledge about construction and technology of electronic equipments | Writter Test | 60% |
| **9.5** Applied activities | **S:** | | |
| | **L:** | | |
| | **P:** | | |
| | **Pr:** | | |
| | **Tc-R[14]:** | Writter Test | 40% |
| **9.6** Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified[15] | | | |
| • The student must demonstrate understanding of the fundamental concepts and technology of PCB manufacturing. | | | |

| Date of completion | Course coordinator (signature) | Coordinator of applied activities (signature) |
|---|---|---|
| 24.09.2025 | | |

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| **Head of Department**<br>**(signature)** | **Date of approval in the Faculty**<br>**Council**[16]<br>7.10.2025 | **Dean**<br>**(signature)** |