



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Internship (Practical placement)

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### Course

Field of study

Electronics and Telecommunications

Area of study (specialization)

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

I/II

Profile of study

general academic

Course offered in

English

Requirements

compulsory

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### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

### Number of credit points

3

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### Lecturers

Responsible for the course/lecturer:

dr inż. Janusz Kleban

janusz.kleban@put.poznan.pl

Responsible for the course/lecturer:

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### Prerequisites

The student has knowledge of basic and major courses (modules) included in the programme for the Electronics and Telecommunications study field. Knows occupational health and safety principles.

Is aware of the limitations of his/her current knowledge and skills; is committed to lifelong learning. Demonstrates responsibility for designed electronic and telecommunication systems. Is aware of the hazards they pose for individuals and communities if they are improperly designed or produced.



### Course objective

To develop the knowledge acquired at university courses and to learn how the theoretical knowledge can be used in solving practical problems with a research component. The tasks performed by the student should be related to the diploma profile. To develop interests in areas where students intend to write their master's theses.

### Course-related learning outcomes

#### Knowledge

1. The student has knowledge, together with a necessary practical background, of basic and major courses (modules) taught in the Electronics and Telecommunications study field.
2. Has a basic knowledge of management, including quality management, intellectual property rights, patent law and social, technical and economical constraints referring to an engineer's work.

#### Skills

1. The student is able to practically apply the knowledge gained during the academic curriculum.
2. Is able to formulate a design specification of a complex electronic and telecommunication system, taking into consideration legal issues including intellectual property rights, and other non-technical issues such as environmental protection; in doing this, he/she applies appropriate standards and recommendations.
3. Can effectively implement the occupational health and safety principles.

#### Social competences

1. Understands the dilemmas related to working in electronics and telecommunication. Is able to think and act in a businesslike way.
2. Understands the legal framework of Polish and international standards in electronics and telecommunications.
3. Is aware of the main challenges facing electronics and telecommunication in the 21st century. Is aware of the impact electronics and ICT systems and networks will have on the development of the information society.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Achievement of learning outcomes is verified by the Internship Coordinator on the basis of the following documents: (1) Internship Certificate issued by the institution accepting the student for the internship, (2) Internship Diary confirmed by the internship supervisor from the company, with particular emphasis on the internship supervisor opinion's, (3) Internship Self-Evaluation – survey form of usefulness and satisfaction with the completed internship.



If the student apply for obtaining credit for internship on the basis of work performed as part of employment the documents submitted by the student, e.g. copy of an employment contract or certificate of employment at a given post or relevant documents confirming the compliance of their business activities with the internship programme, are subject to analysis. Professional work carried out in these modes must guarantee the achievement of the learning outcomes assumed for student internships.

### Programme content

The basic tasks of the trainee should include:

1. Completing health and safety training according to the regulations applicable to the employees of the department in which the student is taking up the internship.
2. Acquaintance with the profile of activities and principles of work organization in the enterprise, organizational structures, division of competences, work planning and control procedures as well as document circulation and information flow.
3. Getting to know the company's IT infrastructure, how is used the Internet techniques in the company's operations, and technical data protection problems.
4. Active participation in solving practical problems consisted (depending on the specificity of the workplace), among others of:
  - a) performing an independent project task or a task that is part of a team project, taking into account the level of knowledge of the trainee in the field of electronic, optical or optoelectronic systems, telecommunications networks, electromagnetic fields, etc. and set account for this task;
  - b) performing an independent project (or part of a team task) or simulation using programmable digital circuits in the area of multimedia systems and services, as well as computer or telecommunication networks;
  - c) performing independent tasks or project in the field of security systems, in particular related to network security and secure data transmission, e.g. configuration of network equipment and protocols;
  - d) performing independent tasks regarding satellite telecommunication systems;
  - e) performing research tasks in the field of optimization, signal processing and simulation to improve practical skills related to optimization implementation, numerical methods and simulations, as well as to gain a broad view of the problems faced by electronics and telecommunications.
5. Preparation of the Internship Diary.

### Teaching methods



Depending on the location of the internship and the tasks carried out, the following teaching methods can be used: (1) problem or conversation lecture; (2) exchange of ideas (brainstorming); (3) project method or expert tables; (4) observation, measurement in the field.

### Bibliography

#### Basic

1. Study regulations of full-time and part-time first and second cycle and long-cycle studies adopted by the Academic Senate of Poznań University of Technology
2. Organisational Regulations of Student Internship for students of Electronics and Telecommunications, and Teleinformatics at the Faculty of Computing and Telecommunications of the Poznan University of Technology

#### Additional

1. B. Rączkowski, BHP w praktyce. Gdańsk: ODDK, 2014

### Breakdown of average student's workload

	Hours	ECTS
Total workload	160	3,0
Classes requiring direct contact with the teacher		
Student's own work (carrying tasks under the supervision of the internship supervisor at the company, preparation of the internship diary and survey) <sup>1</sup>	160	3

<sup>1</sup> delete or add other activities as appropriate