

# Subject programme

- Subject name / subject module: **Expert classes (1<sup>st</sup> semester)**
- Lecture language: **English**
- The location of the subject in study plans:**
  - Area or areas of the studies: Computer Engineering and Mechatronics
  - Degree of the studies: **1<sup>st</sup> degree studies**
    - Field or fields (implementation of effects standard): **Mechatronics**
- Supervision of subject implementation:
  - The Institute / Another unit: **Institute of Informatics and Mechatronics**
  - The person responsible for the subject: **Szczutkowski Marek, dr inż.**
  - People cooperating in the development of the programme of the subject:
- The number of hours and forms of teaching for individual study system and the evaluation method

Mode of study	Teaching activities with the tutor																				Total ECTS				
	Form of classes																								
	SOW	ECTS	Lecture	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS		
Full-time studies			15	35																					
Part-time studies					2																				2
Credit rigor	...		Graded assignment																						

- Student workload – ECTS credits balance  
*1 ECTS credit corresponds to 25-30 hours of student work needed to achieve the expected learning outcomes including the student's own work*

Activity (please specify relevant work for the subject)	Hourly student workload (full-time studies/part-time studies)
Participation in lecture	15
Preparation to the test	13
Independent study of the subject	20
Participation in an exam / graded assignment / final grading	2
Total student workload (TSW)	50
ECTS credits	2
* Student's workload related to practical forms	0
Student's workload in classes requiring direct participation of academic teachers	15

- Implementation notes: recommended duration (semesters), recommended admission requirements, relations between the forms of classes:

None

Recommended duration of the subject is taken from the course plan.

- Specific learning outcomes – knowledge, skills and social competence

Specific learning outcomes for the subject		Form	Teaching method	Methods for testing of (checking, assessing) learning outcomes
Outcome symbol	Outcome description			
<b>Knowledge</b>				
K_W16	Students knows and understands issues related to standards and certification in relation to technical systems, and is able to identify the need for their use in practice.	Lecture	expository methods	Test
<b>Skills</b>				
K_U15	Student is able to find relevant information in the field of certification and standardization and is aware of organizational, legal and technical tools supporting the relevant processes.	Lecture	expository methods	Test

- Assessment rules / criteria for each form of education and individual grades

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0% - 50%	ndst	81% - 90%	db
51% - 70%	dst	91% - 93%	db+
71% - 80%	dst+	94% - 100%	bdb

Activity	Grades	Calculation	To Final
Test	bdb (5)	5*100%	5

10. The learning contents with the form of the class activities on which they are carried out

(Lecture)

1. Certification of the conformity of products used for fire protection;
2. Submitting the product for certification;
3. Formal verification of the application and submitted documentation;
4. Product testing and analysis of test results;
5. Assessment of product manufacturing conditions;
6. Assessment and verification of product documentation and making decisions in the certification process;
7. Submitting the product for UAE voluntary conformity certification;
8. Technical opinions of CNBOP-PIB.

11. Required teaching aids

Lecture - multimedia projector

12. Literature:

a. Basic literature:

ISO publication good standardization practice (online:

<https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100440.pdf>)

Sergey Ermakov, Alexandr Beletskii, Oleg Eismont, Vladimir Nikolaev, Liquid Crystals in Biotribology. Springer International Publishing Switzerland 2016, - book.

a. Supplementary literature:

Szczutkowski, M., Computer aided laboratory accreditation process. Measurement databases as a initial stage of software application, Journal of POLISH CIMAC Vol. 6 No 3, 2011.

Szczutkowski M., Computer aided laboratory accreditation process service to the customer as a requirement of iso/iec 17025 standard - initial discussion paper, Journal of Polish CIMAC. Selected Problems of Designing and Operating Technical Systems, 2012, Vol. 7, 3, pp. 315-319

Szczutkowski M., Computer aided accredited laboratory processes in public university environment Proceedings in Electronic International Interdisciplinary Conference EIIC 2012, Žilina (Slovakia) : 3-7 September 2012

b. Internet sources:

[https://ec.europa.eu/research/industrial\\_technologies/pdf/handbook-standardisation\\_en.pdf](https://ec.europa.eu/research/industrial_technologies/pdf/handbook-standardisation_en.pdf), 12.2020

<https://pkn.pl/en>, 12.2020

<https://www.pca.gov.pl/en/>, 12.2020

<https://www.iso.org/home.html>, 12.2020

13. Available educational materials divided into forms of class activities (Author's compilation of didactic materials, e-learning materials, etc.)

14. Teachers implementing particular forms of education

Form of education	Name and surname
1. Lecture	Szczutkowski Marek, dr inż.