

FACULTY OF ELECTRICAL  
ENGINEERING**SUBJECT CARD**

Name in Polish: **Praktyka zawodowa (wakacyjna 6-tygodniowa)**  
 Name in English: **Professional practice (6-week)**  
 Main field of study (if applicable): **Control Engineering and Robotics**  
 Specialization (if applicable):  
 Level and form of studies: **1st level, full-time**  
 Kind of subject: **optional**  
 Subject code: **ARR040055Q**  
 Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU):				240	
Number of hours of total student workload (CNPS):				180	
Form of crediting:				crediting with grade	
For group of courses mark (X) final course:					
Number of ECTS points:				6	
including number of ECTS points for practical (P) classes :				6	
including number of ECTS points for direct teacher-student contact (BK) classes:				4.20	

**PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES**

1. Passing the required number of semesters of study plan or admission to the implementation of the practice by the Commissioner for practice.

**SUBJECT OBJECTIVES**

- Verification of the knowledge gained during the classes, with the actual requirements of the employers.
- Gaining industrial experience, learning of basic technical equipment and technology of companies, knowledge of the specific work of higher technical personnel
- Expanding the knowledge gained during education and developing the skills to use it.
- Getting to know the specifics of the professional and development of specific skills directly related to the place of performance of the practice.
- Getting to know the organizational structure of company, principles of work organization and distribution of competences, procedures, work planning and work control.
- Improving the organization of individual and team work, effective time management, conscientiousness and responsibility for assigned tasks.
- Improving skills in using foreign languages in professional situations.
- Professionalization of professional behavior, compliance with the rules of professional conduct and respect for technical and cultural diversity

**SUBJECT EDUCATIONAL EFFECTS***relating to knowledge:**relating to skills:*

- PEK\_U01 He has the ability to work independently and as a team.  
 PEK\_U02 He has an ability to use the gained knowledge to creatively analyze and solving various engineering problems  
 PEK\_U03 Skills in estimation of the time needed to carry out the ordered task or project.

*relating to social competences:*

- PEK\_K01 He has a sense of responsibility for their own work, he is open to the exchange of ideas and new challenges

PROGRAMME CONTENT		
Form of classes - project		Number of hours:
Proj 1	Individual tasks for each student depending on the choice of site for practice	240
Total hours:		<b>240</b>

TEACHING TOOLS USED
N1. Keynote presentation at the company's operations.
N2. Consultation.
N3. Specialized equipment and measuring technology used in the company.
N4. Specialized computer programs to support the company.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT		
Evaluation <i>F - forming (during semester)</i> <i>P - concluding (at semester end)</i>	Educational effect number	Way of evaluating educational effect achievement
F1(P)	PEK_U01 PEK_U02 PEK_U03 PEK_K01	Individual rating (2.0....5.5) on the basis of a written report just completed practice and requirements contained in the "Rules of Practice".
P(P)	P=F1	

PRIMARY AND SECONDARY LITERATURE
<b>PRIMARY LITERATURE:</b> [1] K. Tchoń et al.: "Manipulatory i roboty mobilne: modele, planowanie ruchu, sterowanie", Akademicka Oficyna Wydawnicza PLJ, Warszawa 2000 [2] M. Spong, M. Vidyasagar : "Dynamika i sterowanie robotów", WNT, Warszawa 1997 [3] E. Jezierski: "Dynamika robotów" WNT, Warszawa 2006 [4] Instrukcje do ćwiczeń <a href="http://rab.ict.pwr.wroc.pl/lab_010/">http://rab.ict.pwr.wroc.pl/lab_010/</a>
<b>SECONDARY LITERATURE:</b> [1] J. J. Craig: „Wprowadzenie do robotyki: mechanika i sterowanie”, WNT, Warszawa 1993 [2] R. Murray, Z. Li, S. S. Sastry: „A Mathematical Introduction to Robotic Manipulation”, CRC Press, Boca Raton 1994 [3] Springer Handbook of Robotics: Springer-Verlag, Berlin 2008 [4] B. Siciliano, et. al.: „Robotics”, Springer-Verlag, London 2009

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT  
**ARR040055Q - Professional practice (6-week)**  
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Control Engineering and Robotics**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)	Subject objectives	Programme content	Teaching tool number
PEK_U01	K1AiR_U34	C.1 C.2 C.3 C.4 C.5 C.6 C.7 C.8	Proj1	N.1 N.2 N.3 N.4
PEK_U02	K1AiR_U34	C.1 C.2 C.3 C.4 C.5 C.6 C.7 C.8	Proj1	N.1 N.2 N.3 N.4
PEK_U03	K1AiR_U34	C.1 C.2 C.3 C.4 C.5 C.6 C.7 C.8	Proj1	N.1 N.2 N.3 N.4
PEK_K01	K1AiR_K03	C.1 C.2 C.3 C.4 C.5 C.6 C.7 C.8	Proj1	N.1 N.2 N.3 N.4