

COURSE REGULATIONS

Theory of Machines and Automatic Control

The Faculty of Automotive and Construction Machinery Engineering

full-time study, winter semester, academic year: 2019/2020

Course ID: 1150-00000-ISA-0204 (4 ECTS credit points)

Fields of study: Electric and Hybrid Vehicle Engineering,

Mechatronics of Vehicles and Construction Machinery

course leader: Sebastian Korczak, PhD Eng. (Department of Mechanics)

Course form and content

This course consist of 30 hours lecture and 15 hours project class. This regulations extends base course information sheet available on ECTS catalog (<https://ects.coi.pw.edu.pl>). All materials available also at <http://myinventions.pl/students/>.

Recommendations, restrictions, attendance

Recommended preliminaries: algebra, analysis, differential equations, theoretical mechanics.

Attendance on the lecture – recommended but not obligatory.

Attendance on the project class – mandatory presence. One unexcused absence allowed.

Partial verification of learning outcomes

Lecture – no partial verification during semester.

Project class – partial verification of learning outcomes with three individual projects. For more details see below *class regulations*.

Project class regulations

During the course students perform three individual projects according to class schedule. To pass the class all projects must be accepted by teacher and total number of 13 points must be achieved.

More than one unexcused absence will cause negative final mark. A week project delay will cause minus one point. **More than two**-week project commitment delay will cause negative final mark.

Class scoring:

- 1st project: 0-10pts

- 2nd project: 0-5pts

- 3rd project: 0-10pts

Final mark evaluation based on total number of points:

2,0 (unsatisfactory): <13,0

3,0: 13,0-15,0

3,5: 15,5-17,5

4,0: 18,0-20,0

4,5: 20,5-22,5

5,0: 23,0-25,0

Project topics

1. Kinematics of mechanisms.
2. Machine dynamics.
3. PID control systems' characteristics and stability analysis.

Providing information on grades awarded

Form of partial grades publication method – to be agreed with group tutor.
Last day of final project class grading – last day of a semester.

Final verification of learning outcomes (exam)

There will be a written exam on skills and knowledge during examination session. Passed project class with positive mark (grade visible on usosweb) is obligatory for exam attendance.

Final course grade

Students with positive marks from the exam and the project class will obtain positive final course grade calculated as a mean value of project and exam mark. Final mark rounding depends on previous marks from exam. Usosweb protocols will be accepted and closed on last session day.

Materials and devices approved

During the project class all materials are allowed.
You can not use any written materials and electronic devices during the exam (mobile phones, smart watches, calculators). Table of Laplace transform if needed will be displayed on the screen or table.

Rules on retaking

Positive project class marks from previous academic year could be accepted during present course. Student have to send a proposal to course leader with an information about a mark to transfer.

Theory of Machines and Automatic Control - project class

The Faculty of Automotive and Construction Machinery Engineering

Winter 2019/2020

2.1 EHVE – Wednesday, 8:15-10:00, room 3.14, S. Korczak, P. Wawrzyniak

2.2 EHVE – Wednesday, 10:15-12:00, room 3.11, S. Korczak, P. Wawrzyniak

2.1 MTR – Friday, **10:15-12:00**, room 0.3, M. Parafiniak

Group / date		topics	assessment
2.1 EHVE 2.2 EHVE	2.1 MTR		
23.10.2019	25.10.2019 8.11.2019	Introduction. 1st project topics distribution. Graphical methods.	---
30.10.2019	---	---	---
6.11.2019	8.11.2019 15.11.2019	1st project consultations. Analytical method.	---
13.11.2019	15.11.2019	---	---
20.11.2019	22.11.2019	---	---
27.11.2019	29.11.2019	1st project commitment. 2nd project topics distribution.	1st project evaluation.
4.12.2019	6.12.2019		
11.12.2019	13.12.2019	2nd project consultations.	---
18.12.2019	20.12.2019	2nd project commitment. 3rd project topics distribution. Characteristics of basic automatic control elements. Block diagram algebra.	2nd project evaluation.
Winter break (23.12.2019 – 6.02.2020)			
8.01.2020	10.01.2020	---	---
15.01.2020	17.01.2020	3rd project consultations. PID control.	---
22.01.2020	24.01.2020	3rd project consultations & commitment.	3rd project evaluation.
23.01.2020	31.01.2020	Final class evaluation.	
1.01.2020 – 14.02.2020: exam session			