

## COURSE GUIDE

<u>Subject name</u>	<b>Management of the machines exploitation</b>
<u>The implementing entity</u>	<b>Institute of Production Engineering</b>
<u>The person responsible for preparing</u>	<b>Dr inż. Manuela Ingaldi</b>
<u>ECTS points</u>	<b>2</b>

### TYPE OF TEACHING – NUMBER OF HOURS PER SEMESTER

LECTURE	CLASS	LABORATORY	PROJECT	SEMINAR
<b>15</b>	<b>15</b>			

### COURSE AIMS

- C1. Knowledge about basic issues concerning the operation of technical facilities.
- C2. Ability of assessment and the use of modern technical facilities.
- C3. Practical implementation of TPM, PAMCO factors and ABC Technology method.

### ENTRY REQUIREMENTS FOR KNOWLEDGE, SKILLS AND OTHER COMPETENCES

- 1. Student has a basic knowledge about quality management and production processes.
- 2. Student has the ability to perform mathematical calculations.
- 3. Student is able to use basic computer programs, such as text editor and spreadsheet.

### LEARNING OUTCOMES

- EK 1- Student uses the concepts of exploitation of technical systems.
- EK 2- Student can describe the functioning of the machine maintenance (TPM) in the production process.
- EK 3- Student distinguishes methods which improve operation of technical facilities in the production system.
- EK 4- Student is able to apply the relevant factors to assess the use of working time of machines and equipment.
- EK 5- Student is able to assess modernity of selected machine or equipment.

### COURSE CONTENT

Type of teaching – LECTURE	Number of hours
W1- Basic concepts associated with the exploitation of machinery and equipment.	1
W2-W3 Exploitation of and reliability of the technical equipment (objects).	2
W 4-W5- Problems of quality of exploitation and organizational techniques.	2
W6-W8- TPM concepts and its objectives defining.	3
W9- The main waste of devices efficiency.	1
W10- Reliability characteristics of technical objects.	1
W11-W12- Practice 5S - stages of implementation and application.	2

W13-W14- Analysis of the use of working time of machines and equipment.	2
W15- Origins of SMED method.	1
<b>Type of teaching – LABORATORY</b>	<b>Number of hours</b>
C1 – Technology assessment – Sto matrix	2
C2 – Technology assessment – 3x3 Matrix	2
C3 – Modernity assessment – ABC method	3
C4 – Machine efficiency – PAMCO factor	3
C5 – Machine efficiency – TPM factor	2
C6 – Analysis of the quality ability of machines and equipment. Factors $C_{pm}$ , $C_{pmk}$	2
C7 – Final test	1

### TEACHING TOOLS

1. Audio Visual Equipment
2. Blackboard chalk + board
3. Handbooks + scripts

### WAYS OF ASSESSMENT (F – FORMATIVE, P – SUMMATIVE)

- F1. Evaluation of the work in the various phases of the project  
 F2. The assessment of student's work based on observation  
 P1. Evaluation of exercises  
 P2. Test

### BASIC AND SUPPLEMENTARY RESOURCE MATERIALS

#### Basic resources:

1. Borkowski S., Selejdak J., Salamon S.: Efektywność eksploatacji maszyn i urządzeń, Wydaw. Wydz. Zarządzania Politechniki Częstochowskiej, Częstochowa 2006.
2. Niziński S., Żółtowski B., Informatyczne systemy zarządzania eksploatacją obiektów technicznych, Wyd. Uniwersytetu Warmińsko-Mazurskiego, Olsztyn 2001.
3. Kaźmierczak J.: Eksploatacja systemów technicznych dla studentów kierunków Zarządzanie, Wydaw. Politechniki Śląskiej, Gliwice 2000.

#### Supplementary resources:

1. Żółtowski B., Tylicki H., Wybrane problemy eksploatacji maszyn, Państwowa Wyższa Szkoła Zawodowa, Piła 2004.
2. Niziński S., Eksploatacja obiektów technicznych, Wydawnictwo i Zakład Poligrafii Instytutu Technologii Eksploatacji, Warszawa – Sulejówek – Olsztyn – Radom 2002.
3. Górecki A., Grzegórski Z., Montaż i naprawa maszyn i urządzeń przemysłowych. Technologia, WSiP, Warszawa 2003.

### TEACHERS (NAME, SURNAME, ADRES E-MAIL)

1. dr inż. Marek Krynke krynke@zim.pcz.pl
2. dr inż. Manuela Ingaldi manuela@gazeta.pl