



CAR Master training

Syllabus of face-to-face workshop

Day 2

Topics:

Quality Control Methods

Economic and organizational knowledge



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1 INTRODUCTION

Project CAR Master, No. 2021-1-CZ01-KA220-VET-000033332, is a European Project which is supported by ERAMUS+ – KA2 Cooperation for innovation and the exchange of good practices, Strategic Partnerships for VET education.

The project is mainly focused on blended learning educational program CAR Master and on creating an online platform as a tool for innovative methods which educates masters. The aim of our project is to identify current qualification requirements of CAR Masters in the European automotive sector.

40 % of the education is available online in the CAR Master program, and this tool is supported by face-to-face training, which consists of 60% of the whole learning content. Online learning platform provides modern and attractive methods of education – MOOC, microlearning, gamification etc.

In order to achieve this objective, CAR Master intends to create a standardized non-academic knowledge base with the learning material to spread out the information about the benefits and challenges of blended learning in Europe. More specifically, the project results are the following:

Result 1: Definition of key skills of masters

Result 2: CAR Master Curriculum

Result 3: CAR Master Learning experience platform

Result 4: Face to face study

Result 5: Accreditation CAR Master

Result 6: CAR Master xlearning platform - finalization

This workshop syllabus is part of the result 4– Face to face study. We are using the flipped classroom methodology, when the target group will be supported by a face-to-face workshop to successfully graduate the whole learning sessions, including the learning materials in Results 2 and 3.

The workshop syllabus is a very detailed document for the teachers and trainers, including the schedule, goals, and teaching methods of working with the target group during the face-to-face sessions.

Consequently, the Erasmus+ project CAR Master aims at the following activities:

- To define the competence framework of production managers
- To improve the combination of hard and soft skills of production managers (masters)
- To develop open education and innovative practices in a digital area and face-to-face (blended learning)
- To create an online platform as a tool for innovative methods which educate masters.

This **workshop syllabus** was **established for adult educators** working in production companies with masters, foremen, team leaders or productive managers. The main objective is to develop the competencies that productive managers need for daily practical work in industrial companies. It gives an overview of the objectives, the target group, and the contents of the learning materials. In addition,

it provides adult educators with ideas on how to include these contents in their teaching and how to deliver them to their learners.

1.1 Face to face workshop

CAR Master methodology consists of 10 learning units in MOOC:

Unit 1: Total productive maintenance

Unit 2: Production process

Unit 3: Quality control methods

Unit 4: Digital Competences

Unit 5: Economical and organizational knowledge

Unit 6: Professional communication

Unit 7: New technologies

Unit 8: Environment and green skills

Unit 9: Health promotion and Risk prevention

Unit 10: Leadership role of masters

All content units have in the online platform the sections self-assessment tool, MOOC with quizzes, gamification and microlearning.

Face-to-face workshop consists of 5 days to support the self-study during the learning session through the CAR Master Learning experience platform. The workshop syllabus follows the 7 units from the whole learning content as follows:

- Day 1: Total productive maintenance (4 hours) and Production process (4 hours)
- Day 2: Quality control methods (4 hours) and Economic and organizational knowledge (4 hours)
- Day 3: Digital Competences (8 hours)
- Day 4: Professional Communication (8 hours)
- Day 5: Leadership role of masters (8 hours)

We, therefore, support using the **flipped classroom principle** with self-assessment tool, MOOC, microlearning, and gamification (PR3) primarily for theoretical parts of courses that do not require intensive student-teacher interaction. This frees up discussion between the teacher and the student within the direct teaching subsidy - in a face-to-face meeting, there is more space for critical topics, deeper explanations or confrontation of expert opinions and their defence.

One day/8 hours will be focused on the above-mentioned 7 topics – in total 5 days.

That document is primarily addressed to adult educators: teachers, trainers or some persons realizing the training with adults in production companies. It is a detailed syllabus with the proposed time schedule, which can be modified according to the needs of the trainers and especially of the workshop's participants.

2 WORKSHOP SYLLABUS

2.1 Goals

The aim of this workshop series is to help the adult learners to become more effective in their daily work of master/productive manager. They will practice the knowledge from the self-study with many practical examples, case studies with the support of the trainer and in the team.

- Adult learners will be able to use the theoretical knowledge in practice.
- Adult learners will be able to use the theoretical knowledge in team cooperation.
- Adult learners will understand the consequences of the appropriate topics in practical use.
- Adult learners will learn to share the obtained skills with your colleagues and teacher.

2.2 Session Goals

The following session goals follows the learning objectives of online study and are addressed to the adult educators to understand the learn objectives of each topic. The session goals for workshop's participants are stated in the attachment Nr. 1 (Syllabus of full-time workshop for adult learners) and should be share with the participants before workshop or on its very beginning.

2.2.1 Total productive maintenance

After completing the session "Principles of Total Productive Maintenance" the participant will know and be able to:

- the basics around maintenance
- describe maintenance strategies
- the economic importance of maintenance
- describe typical weak points
- the most important basics of Total Productive Maintenance (TPM)
- the 8 pillars concept of TPM
- goals of TPM
- the 5S method
- the most important basics of people management under TPM
- the concept of autonomous maintenance
- how to introduce the concept of TPM to employees

- how to delegate tasks
- the concept of autonomous maintenance

2.2.2 Production process

In this learning session, the participant deals with the most essential basics of the production process. The participant will learn:

- important elements and instruments around work and process planning
- planning strategies and planning methods
- coding and numbering
- the tasks of scheduling
- how the lead time is made up
- the most important terms of capacity and materials management
- methods and goals around material planning as well as working time organization
- the objectives of capacity management
- material requirements planning
- the basics of working and operating time organisation
- the principles of Lean production and associated tools
- the basics of the value chain and how to fundamentally reduce waste along it
- how the KANBAN system works

2.2.3 Quality control methods

To understand the important and cross-company aspect, the participant will

- Know what quality planning involves
- Able to name the levels of quality planning
- Know quality characteristics
- Able to describe internal and external advantages of quality management systems
- Know the objectives, principles, and benefits of quality management systems

- Know the continuous improvement process (CIP) approach to product, process and service quality
- Able to name the phases of CIP
- Know the differences between CIP and Kaizen
- Four important quality management tools and their use in the automotive industry (Ishikawa/fishbone diagram, 5 Why method, Poka-Yoke, 8D method)

2.2.4 Economic and organizational knowledge

In this session the participant will learn about:

- the sub-areas of accounting
- the principles and tasks of controlling
- definitions the terms income and expenses
- definitions the term costs
- name the objectives of human resource planning
- definitions qualitative human resource planning and describe the procedure in qualitative human resource planning
- definitions the terms payment system and remuneration
- the European minimum requirements of working conditions
- the EU regulations to improve work-life balance
- questions they are allowed to ask during a job interview

2.2.5 Digital Competences

In this session the participant will:

- understand the basic characteristics of data security.
- understand the terms cybercrime and hacking.
- be able to recognize malicious and unsolicited emails.
- know measures to physically secure computers and mobile devices.
- know the important mathematical and statistical functions of Excel.
- be able to visualise the data adequately.

- be able to create a pivot table.
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- know measures to physically secure computers and mobile devices.
- know the important mathematical and statistical functions of Excel.
- be able to visualise the data adequately.
- be able to create a pivot table.

2.2.6 Professional Communication

After completing this unit, the participant will have the following knowledge to:

- understand how communication processes are structured.
- explain how communication works according to the sender-receiver model.
- know possible reasons for communicative misunderstandings.
- explain which goals can be pursued with questioning techniques.
- explain when a conflict exists and what the basic characteristics are.
- name the basic characteristics of an escalation.
- know the basic patterns of conflict resolution.
- know potential subjects of dispute which can further lead to conflicts.
- know tools for difficult communication situations.
- explain possible meeting objectives.
- know the rules of meeting preparation.

2.2.7 Leadership role of masters

In detail, the participant should have the following knowledge after completing the course unit:

- define the leadership styles and list the competence of leaders.
- know the basic pillars of successful (team) leadership.
- know the definition of a team role.

- present different circumstances that have a motivating effect on employees.
- know the characteristics of ageing-appropriate work design.
- describe how age can influence the ability to work and behavioural prevention of work in old age.
- explain the term gender.
- explain the relationship between language and reality and use this to make arguments for gender-sensitive language.
- awareness that the unequal treatment of men and women is not only based on biological but rather on social factors.
- know what intercultural diversity is and can effectively support cultural diversity, promote cross-cultural communication and understanding.

2.3 Duration

The recommended duration of the workshop is 5 days, 8 hours per day and 40 hours in total. The recommended length for each of 7 learning session is stated above and can be changed according to the requirements of the particular company or participants. The workshop is designed to support the students in the whole process of blended learning:

- To explain the adult learners the complete methodology of CAR Master
- To prepare the adult learners for all phases of blended learning and be a supportive guide for them during the workshops
- To provide the adult learners with face-to-face support, interactive activities, and practical examples of the learning content
- To ensure the adult learners the various interactive methods in groups, pairs or self-study with the teacher's support in workshops

All proposed activities are specified in more detail and with an estimated time framework. But of course, the activity running or final evaluation discussion is directly proportional to the number and activity of the participants, and the planned time could be longer. It is up to the teacher or trainer to manage the activities and discussions to benefit all participants and to adjust the quantity and length of all proposed activities to the particular group of participants.

The mentioned duration and schedule of the whole workshop is only a recommendation. If the teacher/trainer feels that it would be useful to prolong the duration for more days using all proposed activities, it can be provided. The minimal duration of 5 days/40 hours should be kept reaching the required educational effect for the target group.

It is up to teachers and trainers to customize a proposed pool of activities to the national and local habits. The teacher or trainer is the most familiar with the needs of a particular group, so it is up to him/her to change the start of the workshop (f.e. from 9:00 to 8:00) or the duration of the workshop from 8 to 6 hours and plan more days to keep the recommended duration. The teachers and trainers can understand the proposed learning content as a pool of recommended activities, and their use and composition should strictly respect the needs of a particular group of participants and national/local habits.

1st day is recommended to realize before starting the whole study to obtain the appropriate information on how the whole learning methodology works.

The other days should follow the week (or more) after self-study of the appropriate unit/topic.

The recommendation for the total period of face-to-face workshop is 5 weeks (1 day per week), but the final decision on how to implement this workshop is up to the teacher/trainer. The workshop can also be realized as intensive training in 1 week, or the trainer can choose another division of 5 days.

2.4 Required texts, materials or equipment

Each activity proposed in the workshop design has its structure with a detailed description of the required texts, materials or equipment. The following items are generally necessary for successful workshop running in general.

For participants:

- link to learning texts for self-study: CAR Master platform registration, including the self-assessment tool
- notebook/tablet/smartphone for self-study sessions
- papers/pencils etc.

For trainers/adult educators:

- flipchart, board
- data projector for presentations
- notebook
- cards for participants
- papers, pencils
- dissemination material of the project (PR video, leaflets etc.)
- equipment stated directly in the description of each activity.

2.5 Target group

The target group we focus on is formed mainly by masters (foremen/production managers). They implement the management decision right into the work of operators. They have a direct impact on the quality of products and the effectiveness of the process. Right now, all industrial companies have a lack of educated employees for the position of managers. In general, CAR Master's target audience is:

- Industrial companies
- Masters and talents in industrial production
- Trainers, HR experts
- Educational institutions and schools

It is recommended to have only a small group of the participants – maximum of 15 persons to ensure the individual access and support to all of them.

2.6 Evaluation of the workshop

The participant will be a successful graduator if participates in 70% of the total workshop duration, i.e. he/she has to pass at least 28 hours in face-to-face learning (in case of planned 40 recommended hours). After successful participation, the participant will receive the certificate confirming the attendance. The certificate template is attached to that document as Appendix Nr. 3.

It is recommended to ask the participants for their expectations at the beginning of the face-to-face workshop and to obtain the final feedback on the last day of the workshop. The continuous evaluation will be made at the end of each session day.

The evaluation of the knowledge and skills will be realized continuously during the session by the teacher. The participants will receive individual recommendations continuously during the whole workshop.

The trainer should appreciate the partial successes of the learning and be supportive individually to each participant.

3 SCHEDULE OF THE WORKSHOP

3.1 Day 2 – Quality Control methods and Economic and organizational knowledge

Introduction:

The second day of the face-to-face methodology is focused on the third and fourth learning topics: Quality Control methods and Economic and organizational knowledge. The duration of each topic should be 4 hours; the whole learning day is planned for 8 learning hours with short coffee breaks and 1 hour for lunch. The planned schedule can be changed according to the trainer's needs and participants' group – also, division to 2 half days is possible.

9:00 – 9:20 – Welcome, introduction and expectations

The teacher will introduce himself/herself and ask the participants for an introduction of each participant and expectations (2-3 minutes per participant). After the introduction, the teacher will warm up the participants with an icebreaker.

WORKSHOP SESSION	CAR Master – Day 2 Day 2, 9:20 – 09:55
ACTIVITY NAME	Icebreaker – Two faces
OBJECTIVES	<ul style="list-style-type: none"> ● To know each other ● To be warmed up ● To ice break the group atmosphere
DESCRIPTION	<ol style="list-style-type: none"> 1. Preparation The preliminary preparation is not necessary 2. Explain the activity to the students (briefing) – 5 minutes <ul style="list-style-type: none"> ● Explain what students can expect from the next 40 minutes ● Create a pleasant and positive atmosphere 3. Run the activity – 10 minutes (individual work) <ul style="list-style-type: none"> ● Everyone finds a quiet place at the table and in just 10 minutes describes their person with two glances at each other. One as positive as possible and one as negative as possible. He/she can include everything he/she has done, failed to do, has or has not done, all his qualities and characteristics that come to mind. He/she may focus on both the material and the spiritual side of his personality. 4. Evaluation (debriefing) – 20 minutes <ul style="list-style-type: none"> ● The teacher/trainer will ask some of the questions below or his own. She/He always waits for the person to think about the answer and then continues with the next question. <ul style="list-style-type: none"> ○ Which of the perspectives did you find better to write? ○ Which face did you describe more based on the past? ○ Which face do you show to the people around you? Do they know both? ○ Do people notice the difference between your faces? ○ In what setting did you set the descriptions of your faces? Was it the same setting or different each time? (e.g. school, work, personal life) ○ Which face do you prefer and how do you work with them? ● Then there can be a joint reflection, where everyone tells what they have written down (not necessarily everything) and what they have realised during the game. (next 15-20 minutes)
TIME FOR THE ACTIVITY	Total time: 35 minutes (+ preparation time) ----- Preparation time: 0 minutes

	Briefing time: 5 minutes Activity time: 10 minutes Evaluation time: 20 minutes
SETTING OF THE ACTIVITY	<p><i>Identify if it is an individual or group activity, if it is led by the teacher or if it is self-learning, if it is done in class or at home. If it is done in group, specify the number of students per group. Specify also the different roles of the teacher and the learners.</i></p> <p>This activity is led by the teacher/trainer and done in the plenum in class.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of activity ● Continuous organization of the activity ● Facilitation of the discussion and evaluation <p>Learners' role:</p> <ul style="list-style-type: none"> ● The students are listening to the explanations, actively working (individually, in the plenum)
MATERIALS FOR THE TEACHER	
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> ● Papers, pencils

After warming up the teacher will start with the topic of Quality Control Methods.

9:55 – 10:55 Learning unit: Quality Control methods

WORKSHOP SESSION	CAR Master: Learning unit I. Quality Control Methods Day Nr. 2 time 09:55 – 10:55
ACTIVITY NAME	PDCA cycle in the master's practice: How to manage the Quality?
OBJECTIVES	How to implement PDCA cycle, use it to produce the quality and to ensure the sustainability
DESCRIPTION	<ol style="list-style-type: none"> 1. Preparation – 5 min The trainer prepares the short explanation of the Deming's PDCA cycle 2. Explain the activity to the students (briefing) – 10 min <ul style="list-style-type: none"> ● Explain what students can expect from the next 40 minutes. ● Explain to students briefly the PDCA cycle (use 1st page worksheet; focus on the master's role in the production process) 3. Run the activity – 45 min <ul style="list-style-type: none"> ● Step 1. Brainstorming in the whole group – 5 min What is the current quality assurance issue you are currently dealing with in your practice? (Collecting cases for further solution + writing on the flipchart)

	<ul style="list-style-type: none"> Step 2. Work 2 small teams – 20 min Each team chooses one case from the flipchart and records their solution on worksheet page For each of the 4 quadrants of the PDCA cycle notes its findings. Step 3. Presentation of the team’s solutions + discussion – 20 min <p>4. Evaluation (debriefing) – 10 min</p> <ul style="list-style-type: none"> Ask your learners if they have some questions Share your personal experience
TIME FOR THE ACTIVITY	<p>Total time: 65 minutes (+ preparation time)</p> <p>-----</p> <p>Preparation time: 5 minutes Briefing time: 10 minutes Activity time: 45 minutes Evaluation time: 10 minutes</p>
SETTING OF THE ACTIVITY	<p><i>Identify if it is an individual or group activity, if it is led by the teacher or if it is self-learning, if it is done in class or at home. If it is done in group, specify the number of students per group. Specify also the different roles of the teacher and the learners.</i></p> <p>This activity is led by the teacher/trainer and done in the plenum in class.</p> <p>Teacher’s/Trainer’s role:</p> <ul style="list-style-type: none"> Explaining the running of activity Continuous organization of the activity Facilitation of the discussion and evaluation <p>Learners’ role:</p> <ul style="list-style-type: none"> The students are listening to the explanations, actively working (in groups, in the plenum)
MATERIALS FOR THE TEACHER	<ul style="list-style-type: none"> Explanation: Deming’s PDCA cycle and its role in the Quality management - appendix to Day 2 – Nr. 4a
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> Worksheet in Appendix to Day 2 Nr. 4b - PDCA Learning text content Unit 3, flipchart, marker

10:55 – 11:05 Coffee break

The following activity concerning the Quality Control Methods is the implementation of 5S rules.

WORKSHOP SESSION	CAR Master: Learning unit I. Quality Control Methods Day Nr. 2 time 11:05 – 13:00
ACTIVITY NAME	How to implement and maintain the 5S rules in production practice

OBJECTIVES	To know the impact of the 5S rules in the praxis and to be able to check if they are followed
DESCRIPTION	<ol style="list-style-type: none"> 1. Preparation – 10 min The trainer prepares a short explanation of the 5S Method by using 1. Page of the worksheet 2. Explain the activity to the students (briefing) – 15 min <ul style="list-style-type: none"> ● Explain what students can expect from the next 40 minutes. ● Explain to students briefly the 5S Method (1st page worksheet) 3. Run the activity – 80 min <ul style="list-style-type: none"> ● Step 1. Individual work – 5 min everyone looks at the pictures (2nd page) individually and finds what errors they show: Which 5S rules are broken? (describe and explain each of the 9 pictures) ● Step 2. Work in pairs (using worksheet) – 15 min Share and discuss your observations with your partner ● Step 3. Plenary discussion (experience/opinions) – 30 min Which violations in the pictures do you consider obvious and fundamental? How you deal with the 5S rules in your company practice? ● Step 4. Brainstorming – 30 min What measures would you put in place to eliminate the most obvious and fundamental violations of the 5S rules? 4. Evaluation (debriefing) – 20 min <ul style="list-style-type: none"> ● Ask your learners if they have some questions ● Share your personal experience: Which of the 5S rules are most frequently violated? What measures are most commonly used to eliminate the mistakes?
TIME FOR THE ACTIVITY	<p>Total time: 115 minutes (+ preparation time)</p> <p>-----</p> <p>Preparation time: 10 minutes Briefing time: 15 minutes Activity time: 80 minutes Evaluation time: 20 minutes</p>
SETTING OF THE ACTIVITY	<p><i>Identify if it is an individual or group activity, if it is led by the teacher or if it is self-learning, if it is done in class or at home. If it is done in group, specify the number of students per group. Specify also the different roles of the teacher and the learners.</i></p> <p>This activity is led by the teacher/trainer and done in the plenum in class.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of activity ● Continuous organization of the activity ● Facilitation of the discussion and evaluation <p>Learners' role:</p> <ul style="list-style-type: none"> ● The students are listening to the explanations, actively working (in groups, in the plenum)

MATERIALS FOR THE TEACHER	<ul style="list-style-type: none"> ● Explanation: 5S rules end their role in the Quality management in Appendix to Day 2 Nr. 4c
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> ● Worksheet in Appendix to Day 2 Nr. 4d ● Learning text content Unit 3, ● flipchart, marker

13:00 – 14:00 Lunch

14:00 -18:00 The second part of the day will focus on “Economic and organizational knowledge”. At first, we will relax during a short icebreaker.

WORKSHOP SESSION	CAR Master - Icebreaker Day 2, 14:00 – 14:20
ACTIVITY NAME	Icebreaker – Storyteller
OBJECTIVES	<ul style="list-style-type: none"> ● To know each other ● To be warmed up ● To ice break the group atmosphere
DESCRIPTION	<p>1. Preparation The preliminary preparation is not necessary</p> <p>2. Explain the activity to the students (briefing) – 5 minutes</p> <ul style="list-style-type: none"> ● Explain what students can expect from the next 20 minutes ● Create a pleasant and positive atmosphere <p>3. Run the activity – 10 minutes (group work)</p> <ul style="list-style-type: none"> ● The game aims to write a story as the group. ● One person begins by writing an opening sentence: "I was once awakened in the middle of the night by a loud bang." Then, the other players add another sentence. The last person writes the last sentence. <p>4. Evaluation (debriefing) – 5 minutes</p> <ul style="list-style-type: none"> ● Finally, the teacher/trainer reads the story to the group. ● You can ask the participants about their feedback.
TIME FOR THE ACTIVITY	<p>Total time: 20 minutes (+ preparation time)</p> <hr/> <p>Preparation time: 0 minutes Briefing time: 5 minutes Activity time: 10 minutes Evaluation time: 5 minutes</p>
SETTING OF THE ACTIVITY	<i>Identify if it is an individual or group activity, if it is led by the teacher or if it is self-learning, if it is done in class or at home. If it is done in group, specify the number of students per group. Specify also the different roles of the teacher and the learners.</i>

	<p>This activity is led by the teacher/trainer and done in the plenum in class.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of activity ● Continuous organization of the activity <p>Learners' role:</p> <ul style="list-style-type: none"> ● The students are listening to the explanations, actively working (individually, in the plenum)
MATERIALS FOR THE TEACHER	
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> ● Papers, pencils

After the icebreaker, the teacher will follow the second topic of the day, "Economic and organizational knowledge".

14:20 – 15:00 Learning unit Economic and organizational knowledge

WORKSHOP SESSION	CAR Master: learning unit Economic and organizational knowledge Day 2, 14:20-15:00
ACTIVITY NAME	Economic and organisational knowledge
OBJECTIVES	<ul style="list-style-type: none"> ● To understand the objectives of human resource planning ● To understand company's payment system and remuneration ● To understand concepts of costs, expenses, accounting. ● To familiarize with real-life scenarios related to planning schedule production area. ● To familiarize with real-life scenarios related to buying spare parts, materials.... for the production area.
DESCRIPTION	<p>1. Preparation (5 minutes)</p> <ul style="list-style-type: none"> ● Distribute materials ● Show the case at the screen https://youtu.be/iAZLkia2Q4E <p>2. Explain the activity to the students (briefing) – 5 minutes</p> <ul style="list-style-type: none"> ● Explain what students can expect from the activity. ● Summarize the importance to understand the economic and organisational knowledge of a production company. <p>3. Run the activity – 25 minutes</p>

	<ul style="list-style-type: none"> ● Explain the students main business concepts as accounting, cost accounting, bookkeeping, statistics, planning accounts. ● Explain what is human resources planning and how they can do that the production areas. <p>4. Evaluation (debriefing) – 5 minutes</p> <ul style="list-style-type: none"> ● Summarize the importance to understand the economic and organisational knowledge of a production company.
TIME FOR THE ACTIVITY	<p>Total time: 40 minutes</p> <p>-----</p> <p>Preparation time: 5 minutes Briefing time: 5 minutes Activity time: 25 minutes Evaluation time: 5 minutes</p>
SETTING OF THE ACTIVITY	<p>This activity is led by the trainer and the learners actively participate.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of the activity. ● Deepening the acquired knowledge on the topic of material planning. ● Summarising the key facts of the topic ● Clarifying questions <p>Learners' role:</p> <p>The students are listening to the explanations and actively participating</p>
MATERIALS FOR THE TEACHER	<ul style="list-style-type: none"> ● Video ● Projector and screen
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> ● Sheets of paper and writing utensils

15:00 – 15:15

Coffee break

15:15 – 16:15

Learning unit Economic and organizational knowledge: activities, case study

WORKSHOP SESSION	CAR Master: Learning unit Economic and organizational knowledge Day 2, 15:15-16:15
ACTIVITY NAME	Economic and organisational knowledge, examples

OBJECTIVES	<ul style="list-style-type: none"> ● Summary of knowledge already acquired. ● Clarification of questions related to the topic. ● Deepening the acquired knowledge about material planning. ● Illustration through a case study. ● Reflection on the processes in one's own company.
DESCRIPTION	<ol style="list-style-type: none"> 1. Explain the activity to the students (briefing) – 10 minutes <ul style="list-style-type: none"> ● Explain what students can expect from the activity. ● Show the case at the screen https://platform.car-master.eu/gamification/ 2. Run the activity – 40 minutes <ul style="list-style-type: none"> ● Divide participants into small groups. ● The students read the situation. ● The students must discuss each answer. ● The students must explain the other groups which is the correct answer and why. ● Other groups must do questions 3. Evaluation (debriefing) – 10 minutes <ul style="list-style-type: none"> ● Summarize the key points discussed during the exercise and the reasons to choose that answer. ● Clarify open questions.
TIME FOR THE ACTIVITY	<p>Total time: 60 minutes</p> <p>-----</p> <p>Briefing time: 10 minutes</p> <p>Activity time: 40 minutes</p> <p>Evaluation time: 10 minutes</p>
SETTING OF THE ACTIVITY	<p>This is a group activity, led by the teacher and done in the plenum in class.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of activity ● Continuous organization of the activity ● Facilitation of the discussion and evaluation <p>Learners' role:</p> <ul style="list-style-type: none"> ● The learners are listening to the explanations ● They work actively in groups of 4-5 people ● They brainstorm and share their ideas with others ● They present the ideas created in their groups to the other students
MATERIALS FOR THE TEACHER	<ul style="list-style-type: none"> ● Gamification case (video) ● Projector and screen
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> ● Sheets of paper and writing utensils

WORKSHOP SESSION	CAR Master: Learning unit Economic and organizational knowledge Day 2, 16:15-16:35
ACTIVITY NAME	Economic and organisational knowledge
OBJECTIVES	<ul style="list-style-type: none"> ● Putting theory into practice.
DESCRIPTION	<ol style="list-style-type: none"> 1. Preparation – 5 minutes <ul style="list-style-type: none"> ● Distribution materials 2. Explain the activity to the students (briefing) – 5 minutes. <ul style="list-style-type: none"> ● Divide participants into small groups, and assign them a specific role: car master, technician, human resources manager... ● The students read the situation: crisis in production area, end of the year, the company produces car screws, the main customer of this company sent some modifications for the new screws but the technical information did not arrived to the correct area, and the order must be ready before Christmas holidays when the company closes. How will you solve it? 3. Run the activity – 15 minutes. <ul style="list-style-type: none"> ● The students must define the organizational chart of the company, which steps should be followed to solve the situation? Who is who in this situation and the role. What the manager has to do, what the technician has to do... ● They will explain the other groups which solutions have adopted and the role played by each person of the company. 4. Evaluation (debriefing) – 5 minutes <ul style="list-style-type: none"> ● Other groups must ask questions and explain if they agree or not with this solution.
TIME FOR THE ACTIVITY	<p>Total time: 30 minutes -----</p> <p>Preparation time: 5 minutes Briefing time: 5 minutes Activity time: 15 minutes Evaluation time: 5 minutes</p>
SETTING OF THE ACTIVITY	<p>This activity is led by the trainer and is carried out by each person alone.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of the activity.

	<ul style="list-style-type: none"> • Being available for questions during the activity. • Leading of the evaluation time • Clarifying questions. <p>Learners' role:</p> <ul style="list-style-type: none"> • The students will answer their own questionnaire.
MATERIALS FOR THE TEACHER	
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> • Sheets of paper and writing utensils • Full learning area 5 questionnaire and it's answers

WORKSHOP SESSION	CAR Master: Learning unit Economic and organizational knowledge Day 2, 16:35-17:50
ACTIVITY NAME	Inventory management game
OBJECTIVES	<ul style="list-style-type: none"> • to help participants develop a better understanding of inventory management, order quantities, and the associated economic implications • game simulates a simplified production and inventory environment
DESCRIPTION	<p>1. Explain the activity to the students (briefing) – 5 minutes</p> <ul style="list-style-type: none"> • Explain what students can expect from the activity. • Participants are divided into small groups representing a different fictional company. Each company produces a specific product, aiming to maximize profits while managing its inventory effectively. <p>2. Run the activity – 50 minutes</p> <ul style="list-style-type: none"> • Divide participants into small groups. • Each group selects a product to manufacture. This product should have associated production costs, demand patterns, and carrying costs. Products can vary in complexity and demand volatility. • Each group starts with an initial inventory of the selected product. This inventory represents the current stock of the product. • Random demand patterns are given for specific periods (e.g., months). • Groups must place orders for additional inventory at the beginning of each period based on demand forecasts, lead times, and order costs. • Orders are placed in advance and will be delivered after the lead time has passed. • Each product has a defined lead time between ordering and delivery. This lead time varies for different products and can be subject to uncertainties. • Carrying costs for each product are provided. These costs can include storage, insurance, obsolescence, and capital tied up in inventory. • Ordering costs, such as setup costs, are associated with placing orders. These costs vary depending on the product.

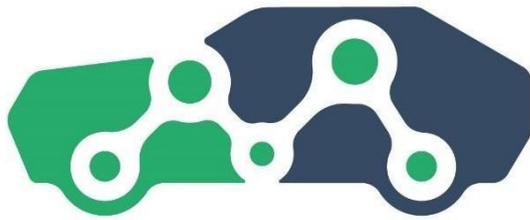
	<ul style="list-style-type: none"> ● Gameplay: During each period, participants must make decisions regarding the following: <ul style="list-style-type: none"> ○ Order quantity: How much to order to meet forecasted demand and balance carrying costs with ordering costs. ○ Safety stock: Whether to maintain safety stock to account for demand or lead time uncertainties. ○ Inventory levels: Monitor current inventory levels and adjust orders accordingly. ● After each period, the trainer reveals the actual demand, lead time, and costs incurred. Groups make decisions for the next period based on this information. ● Scoring: Participants earn points based on their company's financial performance. The scoring can include: <ul style="list-style-type: none"> ○ Profit earned by selling products. ○ Inventory carrying costs. ○ Ordering costs. ○ Penalty for stockouts or excessive inventory. ○ Cumulative profit or return on investment (ROI) over several periods. <p>3. Evaluation (debriefing) – 20 minutes</p> <ul style="list-style-type: none"> ● At the end of the game, a debriefing session is conducted to discuss the economic implications of their decisions. Participants should reflect on the trade-offs between holding inventory, order costs, and the impact on profitability. The debrief should also explore strategies for optimizing inventory management in a real-world production environment. ● This Inventory Management Game can be adjusted and customized to match the complexity and objectives of the training workshop. It provides a hands-on experience for participants to learn about inventory optimization and its economic impact. ● Clarify open questions.
<p>TIME FOR THE ACTIVITY</p>	<p>Total time: 75 minutes</p> <p>-----</p> <p>Briefing time: 5 minutes Activity time: 50 minutes Evaluation time: 20 minutes</p>
<p>SETTING OF THE ACTIVITY</p>	<p>This is a group activity, led by the teacher and done in the plenum in class.</p> <p>Teacher's/Trainer's role:</p> <ul style="list-style-type: none"> ● Explaining the running of activity ● Continuous organization of the activity ● Facilitation of the discussion and evaluation <p>Learners' role:</p> <ul style="list-style-type: none"> ● The learners are listening to the explanations ● They work actively in groups of 3-4 people ● They brainstorm and share their ideas with others ● They present the ideas created in their groups to the other students

MATERIALS FOR THE TEACHER	<ul style="list-style-type: none"> • Flipchart, markers
MATERIALS FOR THE STUDENT	<ul style="list-style-type: none"> • Sheets of paper and writing utensils

17:50 – 18:00 The trainer will ask the participants about the evaluation of the whole day, fulfilment of their expectations and recommend casual sources for study to the learned topics. The trainer can inform the participants about the next day of the workshop focused on Digital Competences. The follow-up of all session can be recommendation to be back to the learning units in CAR Master platform: <https://platform.car-master.eu/>

4 ATTACHMENTS

1. Syllabus of full-time workshop for adult learners
2. Schedule the full-time workshop on 1 page
3. Certificate template for full-time workshop
4. Appendix to Day 2:
 - a. Explanation Deming's PDCA cycle
 - b. Worksheet Quality PDCS cycle
 - c. Explanation 5S Method
 - d. Worksheet Quality 5S method



CAR Master training

**ARE YOU INTERESTED IN FURTHER INFORMATION? WE
LOOK FORWARD TO YOUR VISIT TO OUR WEBSITE!**



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Syllabus of CAR Master workshop for participants

Name: CAR Master Workshop

Duration: 40 hours

Introduction:

The project is mainly focused on blended learning educational program CAR Master and on creating an online platform as a tool for innovative methods which educates masters. The aim of our project is to identify current qualification requirements of CAR Masters in the European automotive sector.

40 % of the education is available online in the CAR Master program, and this tool is supported by face-to-face training, which consists of 60% of the whole learning content. Online learning platform provides modern and attractive methods of education – MOOC, microlearning, gamification etc.

This workshop syllabus was established for masters, foremen, team leaders or productive managers working in production companies. The main objective is to develop the competencies that productive managers need for daily practical work in industrial companies.

The workshop consists of 5 days which support the self-study through the CAR Master platform. The workshop syllabus follows the learning units of the whole methodology as follows:

- Day 1: Total productive maintenance (4 hours) and Production process (4 hours)
- Day 2: Quality control methods (4 hours) and Economic and organizational knowledge (4 hours)
- Day 3: Digital Competences (8 hours)
- Day 4: Professional Communication (8 hours)
- Day 5: Leadership role of masters (8 hours)

We, therefore, support using the flipped classroom principle with self-assessment tool, MOOC, microlearning, and gamification (PR3) primarily for theoretical parts of courses that do not require intensive student-teacher interaction. This frees up discussion between the teacher and the student within the direct teaching subsidy - in a face-to-face meeting, there is more space for critical topics, deeper explanations or confrontation of expert opinions and their defence.

Learning objectives:

The aim of this workshop series is to help the masters, foremen, productive managers, team leaders to become more effective in their daily work. You will be able to use the theoretical knowledge in practice.

- You will be able to use the theoretical knowledge in team cooperation.
- You will understand the consequences of the appropriate topics in practical use.
- You will learn to share the obtained skills with your colleagues and teacher.

Required texts, materials, or equipment:

- Link to CAR Master online platform: <https://platform.car-master.eu/>
- Notebook/tablet/smartphone for self-study sessions
- Papers/pencils etc.

Evaluation: You will receive a certificate for completing the workshop (at least 70% of your attendance).



FACE TO FACE WORKSHOP



Day 1

TPM + Production processes

9:00 - 09:20
Introduction

09:20-10:00
Expectations, warming

10:00-10:30
Learning unit I to topic TPM

10:30-10:45
Coffee break

10:45-13:00 Activities to
topic TPM, summary

13:00-14:00
Lunch

14:00 - 14:45 Learning unit II
Production process

14:45-15:45
Activities to topic

15:45-16:00
Coffee break

16:00-17:15
Putting theory into praxis

17:15-17:45
Case studies to topic

17:45-18:00
Evaluation, goodbye

Day 2

Quality Control methods
Economic knowledge

9:00 - 09:20
Welcome, expectations

09:20-09:55
Ice-breaker

09:55-10:55 Learning unit I:
Quality Control methods

10:55-11:05
Coffee break

11:05-13:00 Activities to
topic

13:00-14:00
Lunch

14:00 - 14:20 Energizer

14:20-15:00 Learning unit I:
Economic knowledge

15:00-15:15
Coffee break

15:15-16:35
Activities to topic

16:35-17:50
Case studies to topic

17:50-18:00
Evaluation, goodbye

Day 3

Digital Competences

9:00 - 09:55
Expectations, ice-breaker

09:55-10:25 Learning unit I.
Digital competences

10:25-10:40
Coffee break

10:40-12:30
Digital skills/tools at workplace

12:30-13:30
Lunch

13:30-14:50
Activities to the topic

14:50 - 15:10
Energizer

15:10-15:55
Practical activities of topic

15:55-16:10
Coffee break

16:00-16:15
Coffee break

16:10-17:45
Group exercise + Case study

17:45-18:00
Evaluation, follow-up

Day 4

Professional Communication

9:00 - 9:30
Welcome, expectations

09:30-10:15
Ice-breaker

10:15-11:15 Learning unit I:
Professional communication

11:15-11:30
Coffee break

11:30-12:35 Learning unit II:
Professional Communication

12:35 - 13:35
Lunch

13:35-14:00
Energizer

14:00-15:35
Activities to the topic

15:35-15:45
Coffee-break

15:45-16:10
Energizer

16:10-17:40
Pair work to the topic

17:40-18:00
Evaluation, follow-up

Day 5

Leadership of masters

9:00 - 10:00 Welcome,
expectations

10:00-11:10 Learning unit I:
Leadership of masters

11:10-11:25
Coffee break

11:25-12:25 Learning unit II:
Diversity of the work team

12:25-13:25
Lunch

13:25 - 13:45
Energizer

13:45-14:30
Group exercise

14:30-14:45
Coffee break

14:45-15:05
Energizer II

15:05-16:35
Pair work

16:35-16:50
Coffee break

16:50-18:00 Evaluation,
follow-up, goodbye



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CAR Master
training

CERTIFICATE

OF PARTICIPATION

THIS IS TO CERTIFY THAT

has successfully completed the tailor-made training for foremen in production through the face to face workshop (scope of training 40 hours).



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The CAR Master training certificate of participation has been issued based on at least 70% of personal participation on face to face workshop duration. The 7 thematic modules of face to face training corresponding to non-formal vocational education and training represent a set of learning objectives which are presented in the table.

1. Principles of Total Productive Maintenance (TPM) –4 hours	2. Production process basics – 4 hours	3. Quality control methods – 4 hours	4. Digital competences – 8 hours
<p>Knowing the maintenance strategies in production.</p> <p>Knowing the most important basics of TPM.</p> <p>Knowing the most important basics of people management under TPM.</p>	<p>Knowledge of the most important methods and instruments of work and process planning.</p> <p>Knowledge of the most important terms of capacity and materials management.</p> <p>Knowing how production factors from all areas of the company should be used economically and efficiently.</p>	<p>Knowing what quality planning means.</p> <p>Knowing what the aims and benefits of quality management represent.</p> <p>Knowing what the possibilities are for safe guarding and improvements.</p> <p>Knowing different quality management tools.</p>	<p>Knowing the basis of digital security.</p> <p>Knowing the basics of using Microsoft Excel.</p> <p>Knowing the most common online communication tools work.</p> <p>Knowing the basic rules for presentation</p>
5. Economic and organisational knowledge – 4 hours	6. Professional communication – 8 hours	7. The leadership role of masters – 8 hours	
<p>Knowing the basics of finance and economics and the interrelationships within the company.</p> <p>Knowing the planning staff and enforcing the company's strategy.</p> <p>Knowing the most important European basics concerning labour law.</p>	<p>Knowing about communication theories and how to deal with them in everyday life.</p> <p>Knowing about conflict management and how conflicts can be resolved professionally.</p> <p>Knowing about presentation techniques and how to apply them in meetings.</p>	<p>Knowing how to lead their employees successfully.</p> <p>Knowing how to behave as a leader in a team.</p> <p>Knowing to work in a multigenerational mix and the changes in old age.</p> <p>Knowing to work with people of different backgrounds and sexual orientations</p>	

Day 2: Appendix 4a – Explanation of Deming's PDCA cycle

Brief explanation of the PDCA cycle in the master's production practice

The PDCA cycle always consist of four phases that are applied continuously and repeatedly.

- **Plan – Quality Planning:** Plan your measures based on available resources

(Challenge for the master: Share responsibility for designing the measure with your team)
- **Do – Quality control:** Implement your developed measures

(Challenge for the master: Involve your team members and delegate the tasks, don't just fix mistakes yourself!)
- **Check – Quality assurance:** Check the processes and results consistently and regularly

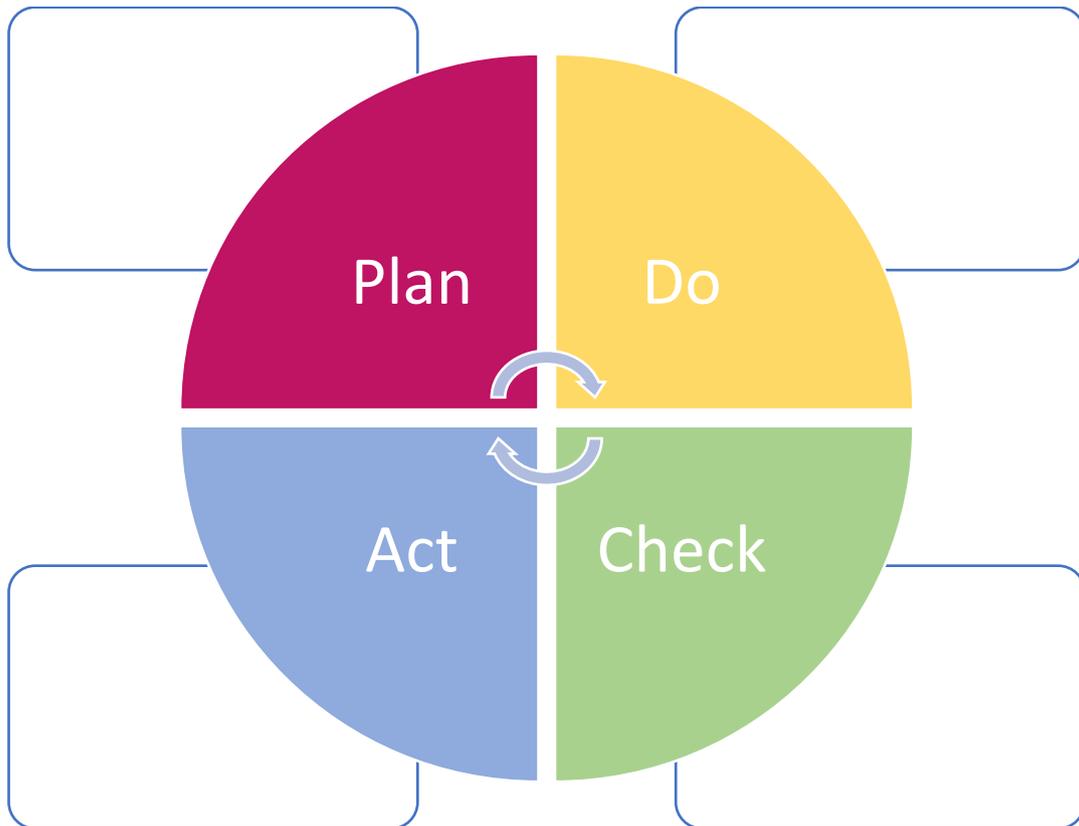
(Challenge for the master: Time management. Plan wisely your time for the control and don't be afraid to check the performance - be aware that control motivates.)
- **Act – Quality gain:** Evaluate the results of the previous measures and use it as a base for future improvements

(Challenge for the master: Don't let up and hang in there! You will only ensure sustainability if you build the next measures on the outcomes of the previous ones.)



Day 2: Appendix 4b – Worksheet PDCA cycle

Worksheet PDCA cycle





Appendix 4c: Explanation: 5S Method/Rules

Brief explanation of the 5S Method

The 5S method allows you to create and maintain a clean, organized and efficient workplace in five steps. It is the basis for continuous improvement, zero errors and cost efficiency. The method was developed in Toyota / Japan and the 5S are an acronym of Japanese words.

1S SEIRI – SORT

2S SEITON – SET IN ORDER

3S SEISO – SHINE

4S SEIKETSU – STANDARDIZE

5S SHITSUKE – SUSTAIN

1S SEIRI – SORT

Sort the necessary tools from the unnecessary and remove the unnecessary items from the workplace. Leave only the necessary equipment (tools, materials, manuals...) on the workplace. Sort unnecessary items also from storage areas - drawers, cabinets and shelves.

2S SEITON – SET IN ORDER

The purpose is to position the necessary tools so that they can be used quickly and easily. It is therefore necessary to clarify the sequence of work steps. Assign the necessary work tool to each step. Mark the location of the tools and keep them in the right place. This way we can easily use them at the right time.

3S SEISO – SHINE

This step takes the idea of order even further: order needs to be taken care of and cleanliness needs to be maintained. Return the used tool to its place. Keep the workplace clean and tidy.

4S SEIKETSU – STANDARDIZE

Standardization means constant and repeated adherence to steps 1S, 2S and 3S. This ensures that clarity and order in the workplace are the standard. A high standard improves work organisation.

5S SHITSUKE – SUSTAIN

In the fifth step, we form a habit to obey the established rules. Discipline is important and the master in particular must set the example. Every worker must know, understand and follow the rules.



Day 2: Appendix 4d Worksheet: Which of the 5S rules are broken in the pictures below?

