

## Course Description Form

<b>1. Course Name:</b>	
Principles of engineering workshops	
<b>2. Course Code:</b>	
PREW133	
<b>3. Semester / Year:</b>	
Second semester (spring)/2023-2024	
<b>4. Description Preparation Date:</b>	
1/2/2024	
<b>5. Available Attendance Forms:</b>	
Attendance lesson	
<b>6. Number of Credit Hours (Total) / Number of Units (Total): units</b>	
30 hours/30 units+ 45 hours/	
<b>7. Course administrator's name (mention all, if more than one name):</b>	
Name: Assistant professor dr. Oday hasan ali al-jammaas Email: dr.oday_aljammaas@uomosul.edu.iq Assistant lecturer Mead waleed saadullah Email: Mead@uomosul.edu.iq	
<b>8. Course Objectives</b>	
<p style="text-align: center;"><b>Theoretical:</b></p> <ul style="list-style-type: none"> <li>- Enabling the student to understand and absorb what is related to the principles of engineering workshops within food laboratories</li> <li>- Enabling the student to know the most important means used in transferring and converting power in food factories</li> <li>- Enabling the student to become familiar with how to design the water system inside the laboratory</li> <li>- Enabling the student to be able to identify the components of electrical installations within food processing plants</li> <li>- The student can judge the safety conditions of devices and equipment</li> </ul>	<p style="text-align: center;"><b>practical:</b></p> <ul style="list-style-type: none"> <li>- Enable the student to become familiar with the equipment, devices and tools that must be available in food industry laboratories</li> </ul>
<b>9. Teaching and Learning Strategies</b>	
<p><b>Theoretical:</b></p> <p>Interactive lecture with the use of presentations – dialogue Discussion -</p>	<p><b>practical:</b></p> <p>Assigning group work and revealing students' skills - assignment</p>

brainstorming - assigning tasks and reporting.

Assignments to write a report for each experiment.

### 10. Course Structure

Week	Hours	Required Learning Outcomes	Name of Unit or subject	Learning method	Evaluation method
First	2Theoretical 3Practical	<b>Theoretical:</b> B1: Explains the concept of motion transmission in food industry laboratories. <b>Practical:</b> B7: Writes a brief overview of the devices used in power transmission.	<b>Theoretical:</b> Movement and its types <b>practical:</b> Power transmission devices	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Second	2Theoretical 3Practical	<b>Theoretical:</b> C1: Explains the most important differences between power transmission methods. <b>practical:</b> C5: Shows the mathematical applications used.	<b>Theoretical:</b> Power transmission means <b>practical:</b> Sports applications	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Third	2Theoretical 3Practical	<b>Theoretical:</b> B2: The efficiency of power transmission means is judged by the obtained transmission ratios. <b>practical:</b> B8: Explains the differences between types of pumps.	<b>Theoretical:</b> Transmission ratio Pumps and their basic operation  <b>practical:</b> Types of pumps Rafts	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Fourth	2Theoretical 3Practical	<b>Theoretical:</b> A1: The efficiency of power transmission means is judged by the obtained transmission ratios. <b>practical:</b> A5: Explains the differences between types of pumps.	<b>Theoretical:</b> Transmission ratio Pumps and their basic operation  <b>practical:</b> Types of pumps Rafts	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Fifth	2Theoretical 3Practical	<b>Theoretical:</b> C2: Familiarizes with the factors affecting obtaining a typical pumping curve. <b>practical:</b> C6: Try out how the electric cycle works.	<b>Theoretical:</b> Pump curves <b>practical:</b> Electrical cycle general applications	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Sixth	2Theoretical 3Practical	<b>Theoretical:</b> C3: Recognizes the symbols of	<b>Theoretical:</b> Water establishment	<b>Theoretical:</b> Auditory methods Writing style on	Short exams, assignments, or

		<p><b>water establishments.</b></p> <p><b>practical:</b> C7: The number and materials used in water installations are represented in a tabular form.</p>	<p>symbols</p> <p><b>practical:</b> Numbers and materials used in water installations</p>	<p>the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting</p>	<p>discussions</p>
Seventh	2Theoretical 3Practical	<p><b>Theoretical:</b> C4: Explains the concept of main electricity and its role in food industry laboratories.</p> <p><b>practical:</b> C8: <b>Write a brief overview of the electrical cycle.</b></p>	<p><b>Theoretical:</b> Main electricity</p> <p><b>practical:</b> Electrical cycle</p>	<p><b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting</p>	<p>Short exams, assignments, or discussions</p>
eighth	2Theoretical 3Practical	<p><b>Theoretical:</b> A2: <b>Learn about the mechanics of electric motors.</b></p> <p><b>practical:</b> A6: <b>Shows the general applications used.</b></p>	<p><b>Theoretical:</b> Electric motor</p> <p><b>practical:</b> General applications</p>	<p><b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting</p>	<p>Short exams, assignments, or discussions</p>
Ninth	2Theoretical 3Practical	<p><b>Theoretical:</b> B3: <b>Proficient in electrical establishment methods</b></p> <p><b>practical:</b> B9: Explains how electrical energy is transmitted.</p>	<p><b>Theoretical:</b> Electrical establishment</p> <p><b>practical:</b> Electrical energy transmission</p>	<p><b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting</p>	<p>Short exams, assignments, or discussions</p>
Tenth	2Theoretical 3Practical	<p><b>Theoretical:</b> A3: <b>It suggests a suitable method for introducing and extracting air from food factories.</b></p> <p><b>practical:</b> A7: <b>Explains the necessity of the ground electrical line in food industry equipment and laboratories</b></p>	<p><b>Theoretical:</b> Food laboratory ventilation</p> <p><b>practical:</b> How to create ground applications</p>	<p><b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting</p>	<p>Short exams, assignments, or discussions</p>
Eleventh	2Theoretical 3Practical	<p><b>Theoretical:</b> B4: He is familiar with the sources of spoilage and corruption when storing various agricultural products.</p>	<p><b>Theoretical:</b> Storage of agricultural products</p> <p><b>practical:</b> Air distribution systems</p>	<p><b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and</p>	<p>Short exams, assignments, or discussions</p>

		<b>practical:</b> B10: Controls air distribution systems within food laboratories.		reporting	
Twelveth	2Theoretic al 3Practical	<b>Theoretical:</b> E1: <b>It shows the changes in voltages in a three-phase electrical cycle.</b>  <b>practical:</b> E2: Writes a brief overview of refrigeration devices.	<b>Theoretical:</b>  Electrical cycle  <b>practical:</b> Cooling devices	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Thirteenth	2Theoretic al 3Practical	<b>Theoretical:</b> A4: <b>Learn about the most important refrigeration and freezing equipment.</b>  <b>practical:</b> A8: Heat pumps are represented by a drawing.	<b>Theoretical:</b> <b>Refrigeration and freezing equipment</b>  <b>practical:</b> Heat pumps	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Fourteenth	2Theoretic al 3Practical	<b>Theoretical:</b> B5: <b>Familiar with the most important methods used in examining devices</b>  <b>Practical:</b> B11: Explains the types of welding used in food industry facilities.	<b>Theoretical:</b>  Methods for checking devices  <b>Practical:</b>  Types of welding	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions
Fifteenth	2Theoretic al 3Practical	<b>Theoretical:</b> B6: Learn how to repair refrigeration equipment.  <b>practical:</b> B12: Experimenting with the welding process in a food processing plant.	<b>Theoretical:</b> Unloading and charging devices and repairing refrigeration equipment <b>practical:</b> Practical application of welding and repair of refrigeration equipment	<b>Theoretical:</b> Auditory methods Writing style on the blackboard Direct dialogue style <b>practical :</b> Assigning tasks and reporting	Short exams, assignments, or discussions

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc . The average is calculated from 25 for theory, as well as for practical, with an average of 15.

## 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Diffeent lectures
Main references (sources)	-----
Recommended books and references (scientific journals, reports...)	-----
Electronic References, Websites	-----

Instructor of theoretical part

dr. Oday hasan ali al-jammaas

Instructor of practical part

Mead waleed saadullah

Chairman of the scientific committee

Prof. Dr. Moafak mahmood ahmed

Head of the department of Food science

Prof. Dr. Sumiya kalaf badawi