

## Course Description Form

1. Course Name:	
METALLURGY	
2. Course Code:	
META 242	
3. Semester / Year:	
First semester /2023-2024	
4. Description Preparation Date:	
1/2/2024	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2Theory/3Practical=3.5 Unit	
7. Course administrator's name (mention all, if more than one name)	
Mohammed Shalaan Abed, Email: <a href="mailto:F.SH.Mohammadmoabcmo@gmail.com">F.SH.Mohammadmoabcmo@gmail.com</a>	
8. Course Objectives	
<b>Course Objectives</b>	Student should be able to understand principles of metallurgy..... Student should be able to understand the mechanical properties of metals Student should be able to analyze thermal equilibrium diagrams and microstructure. Student should be able to understand relation between properties with the h treatments and its applications.
9. Teaching and Learning Strategies	
<b>Strategy</b>	1-Introduction 2-Engineering view on metals 3-View on syllabus 4-Introduce the student on requirements of syllabus 5-Student should be write reports related to syllabus 6-Discussion 7-Study the correlation between theory with the experimental work. 8-Motivation of experimental skills on study.



## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3exp.	Learning properties of metals	Properties of metals	Attendance	Oral exam with lab., exam
2	2Theory 3exp.	Learning about crystallization of metals	crystallization of metals	Attendance	Oral exam,
3	2Theory 3exp.	Learning how to construct cooling curve	Cooling curves	Attendance	Homework with lab. exam
4	2Theory 3exp.	Learning how to construct thermal equilibrium diagram	Thermal equilibrium diagrams	Attendance	Homework
5	2Theory 3exp.	Learning solid solution system	Solid solution system	Attendance	Quiz
6	2Theory 3exp.	Learning eutectic system	Simple eutectic system	Attendance	Homework
7	2Theory 3exp.	Learning combination system	Combination system	Attendance	Homework
8	2Theory 3exp.	Analysis of cu-ni system	Copper nickel system	Attendance	Quiz
9	2Theory 3exp	Analysis of pb-sb system	Lead antimon system	Attendance	Term exam
10	2Theory 3exp	Analysis of pb-sn system	Lead -tin system	Attendance	Lab.exam
11	2Theory 3exp	Analysis of Fe-c diagram with its applications	Iron-carbon system	Attendance	Homework- Lab.exam
12-	2Theory 3exp	Analysis of steel portion, phases and microstructures.	Steel portion	Attendance	Quiz-lab.exam
13	2Theory 3exp	Learning about mechanical properties of steels, microstructures and industrial applications.	Steel portion	Attendance	Homework
14	2Theory 3exp	Learning about types of cast irons	Cast iron	Attendance	Lab.exam
			Heat treatments	Attendance	Lab.exa,

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15	2Theory 3exp	Learning about types of heat treatments  Learning about T.T.T curves of steels.	Heat treatment of steel.	Attendance	
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### 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

1-Lab.exam=15%

2-Quizzes=5%

3-Term exam=20%

4-Final exam(experimental)=20%

5-Final exam (Theory)=40%

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Principles materials and metallurgy engineering. Dr.H.Baker
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	



مدرس المادة

م. م. محمد شعلان عبد



رئيس قسم المكين والآت الزراعية

ا. م. نوفل عيسى محييد



رئيس اللجنة العلمية

ا. د. اركان محمدامين صديق