Course Description Form

1. Course Name: METALLURGY
2. Course Code: META242
3. Semester / Year: AUTUMN/2023−2024
4. Description Preparation Date:1/4/2024
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)
Name: Mohammed Shalaan Abed Email: F.SH.Mohammad moabcmo@gmail.com

8. Course Objectives

Course Objectives	**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 relatic between properties with the heat treatments and its applications.**

9. Teaching and Learning Strategies

Strategy	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 experimen work. 8-Motivation of experimental skills on stydy.

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 la exam
2	2Theory 3exp.	Learning about crystallization of metals	crystallization of metals.	Attendance	Oral exam.
3	2Theory 3exp.	Learning how to constru cooling curve	Cooling curves	Attendance	Homework with lab. exam
4	2Theory 3exp.	Learning how to constru 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 potion,phases and microstructures.	Steel portion	Attendance	Quiz-lab.exam
	2Theory	Learning about	Steel portion	Attendance	Homework

13	3exp	mechanical properties of steels,microstructures and industrial applicartions.			
14	2Theory 3exp	Learning about types of cast irons	Cast iron	Attendance	Lab.exam
15	2Theory 3exp	Learning about types of heat treatments Learning about T.T.T curves of steels.	Heat treatments Heat treatment of steel.	Attendance Attendance	Lab.exa,

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)=205
5-Final exam(Theory)=40%

12. Learning and Teaching Resources

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

رئيس اللجنة العلمية
أ.د. أركان محمدأمين صديق

رئيس قسم المكائن والآلات الزراعية
أ.م.نوفل عيسى محيميد