Course E-Syllabus

1	**Course title**	Manufacturing Engineering Laboratory (MfgE- Lab.)
2	**Course number**	0916515
3	**Credit hours**	1hr.
	Contact hours (theory, practical)	3 Practical hrs. per week
4	**Prerequisites/corequisites**	0946513
5	**Program title**	B.Sc. Industrial Engineering
6	**Program code**	
7	**Awarding institution**	Engineering
8	**School**	Engineering
9	**Department**	Industrial Engineering
10	**Level of course**	5th year
11	**Year of study and semester (s)**	Spring (2nd semester) 2023/2024
12	**Final Qualification**	
13	**Other department (s) involved in teaching the course**	-
14	**Language of Instruction**	English
15	**Teaching methodology**	☒On campus ☒Online ☒Blended
16	**Electronic platform(s)**	☒Moodle ☒Microsoft Teams ☐Skype ☒Zoom ☐Others……
17	**Date of production/revision**	

18 Course Coordinator:

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19 Other instructors:

Name:
Office number:
Phone number:
Email:

Name:
Office number:
Phone number:
Email:

20 Course Description:

As stated in the approved study plan.

Laboratory experiments in the practice and analysis of some forming, machining, casting, and welding operations. Linking the variables involved in the operations with the characteristics and quality of the final products, and the behavior of products during operations. (As per 2019/2020 plan description).

21 Course aims and outcomes:

A- Aims:
Enhance the students practice in the field of manufacturing processes

B- Intended Learning Outcomes (ILOs):
Upon successful completion of this course, students will be able to:

ILO #	After successful completion of this course, the student will be able to	Mapping with The ABET SOs
LO1	Understand the mechanical behavior of materials	**6**
LO2	Practice the most common aspects of casting technology	**6**
LO3	Realize the relationship between machining processes and product quality	**6**
LO4	Describe machine tools	**6**
LO5	Identify the variables that affect the deep drawing process and their impact on the quality of the Drawn products	**6**

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
2	1.1	General Course Orientation General Safety Guidelines	Synchronous /meeting/ Microsoft Teams	-	-
3	2.1	Workshop and related-Labs visits.	On campus tour	Report	
4	3.1	Properties and mechanical behavior of materials.	Synchronous /meeting/ Microsoft Teams	-	Video lecture Lab. Manual
5	4.1	Performing the tensile test	On campus / Properties of materials Lab.	Report	The assigned Textbook Video lecture Lab. Manual
6	5.1	Casting technology	Synchronous /meeting/ Microsoft Teams	-	Video lecture Lab. Manual
7	6.1	Practice the casting process	On campus / Workshop	Report	The assigned Textbook Video lecture Lab. Manual
8	7.1	Practice the deep drawing process	On campus / Workshop	Report	The assigned Textbook Video lecture Lab. Manual
9	8.1	Practice the deep drawing process	On campus / Workshop	Report	The assigned Textbook Video lecture Lab. Manual
10	9.1	**Midterm Examinations**			
11	10.1	Introducing Machine tools	Synchronous /meeting/ Microsoft Teams	-	Video lecture Lab. Manual
12	11.1	Analyze the design and the basic components of lathe machine	On campus / Workshop	Report	The assigned Textbook Video lecture Lab. Manual
	12.1	Effects of cutting conditions on surface roughness of metals	Synchronous /meeting/ Microsoft Teams	-	Video lecture Lab. Manual
13	13.1	Evaluate Roughness and cutting conditions	On campus / Properties of materials Lab.	Report	The assigned Textbook Video lecture Lab. Manual
14	14.1	General examination			
15	15.1	Final examinations			

- Teaching methods include Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include Homework, Quiz, Exam, pre-lab quiz…etc

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
General activities, exercises, project, short exams, and assignments, **Reports**	30	Variant	variant	E- Learning On Campus
Mid exam	30	-		E- Learning On Campus
Final Exam	40	All Topics	16	E- Learning On Campus

24 Course Requirements (e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform…etc.):

University E-mail account
Internet connection
Computers/ Lab top/ or any other suitable device
Webcam

25 Course Policies:

A- Attendance policies:
According to JU- Rules, students are expected to attend every class session and they are responsible for all material, announcements, schedule changes, etc., discussed in class.

B- Absences from exams and submitting assignments on time:
There will be no make-up quizzes Exams or HomeWorks.
Make-up of final exam is subjected to the Dean permission and his approval

C- Health and safety procedures:
Students are obliged to stick with JU rules and COVID19 protocol

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Don't Cheat; direct copying of others work will NOT be allowed or tolerated and will result in a reduction of grade. If you are found to be cheating in any way, on an exam or assignment, even signing the roll sheet for another student, you will be given an "F" for the course. There will be no exceptions.

E- Grading policy:

30% general exercises, project, and short exams, 30% Reports. and 40% final exam

F- Available university services that support achievement in the course:
University internet and electronic systems

26 References:

A- Required book(s), assigned reading and audio-visuals:
Manufacturing Engineering & Technology, Any Edition, by Serope Kalpak Jian and Steven Schmid. Prentice Hall, Any edition.

B- Recommended books, materials, and media:
Instructor's notes and Lab. sheets
Video lectures

27 Additional information:

The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)			
1	*An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics*	**5**	*An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives*
2	*An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors*	**6**	*An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions*
3	*An ability to communicate effectively with a range of audiences*	**7**	*An ability to acquire and apply new knowledge as needed, using appropriate learning strategies*
4	*An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts*		

Name of Course Coordinator: **Mohammad D. AL-Tahat** -Signature: ---------- Date: **15-Jun-22**

Head of Curriculum Committee/Department: ---------- Signature: ----------

Head of Department: Signature: ----------

Head of Curriculum Committee/Faculty: ---------- Signature: ----------

Dean: ---------- Signature: ----------