Course Specification

(Bachelor)

Course Title: **Production Technology and Workshop**
Course Code:**ME 2315**
Program: Bachelor in **Mechanical Engineering**
Department: **Mechanical Engineering**
College: **College of Engineering**
Institution: **King Khalid University, Abha, Saudi Arabia**
Version: **First**
Last Revision Date:

Table of Contents:

A. General information about the course:

1. Credit hours: (3)

1L+2Lab=3Ch

2. Course type

A.	☐University	☐College	■Department	☐Track	☐Others
B.	■Required		☐Elective		

3. Level/year at which this course is offered: (4th/2nd)

4. Course general Description:

This course introduces students to the world of computers which need to be applied for engineering The overall aim of the present course is to explain the basics of production technology and workshop operations as well as a brief review of the engineering materials and the principals of automobile and electricity which may be useful in better understanding of the field of manufacturing technology

5. Pre-requirements for this course (if any)**:**

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6. Pre-requirements for this course (if any)**:**

Nil

7. Course Main Objective(s):

The main aim of this course is to explain the basics of production technology and workshop operations. And to understand engineering materials and the principles of automobile and electricity related manufacturing technology.

1. Teaching mode(mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	75	100
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning	-	-
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours

1.	Lectures	15
2.	Laboratory/Studio	60
3.	Field	--
4.	Tutorial	--
5.	Others (specify)	--
	Total	75

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe various engineering materials and manufacturing processes	[KLO 1] Identify, formulate, solve complex engineering problems using principles of engineering sciences, mathematics, and natural sciences, and to validate the obtained solution.	Lectures Videos Discussion Self-learning	Quizzes Assignments Exams
2.0				
2.1	Apply the theoretical concepts of manufacturing technology to solve practical problems	[KLO 5] Identify and evaluate the issues and constraints of sustainability, economy, environment, politics, health and safety, and society that are relevant to professional solving of complex engineering problems.	Lecture Workshop Exercises Discussions Lab Demonstration	Practical Work Report Quizzes Assignments Final Exam
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate the use of workshop measurement devices	[KLO6] Recognize ethical and professional responsibilities in	Workshop Exercises Discussions Lab Demonstration	Practical Work Report Observations Assignments

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
		engineering situations and commit to the professional ethics and norms of engineering practice to make informed judgments.		
3.2	Collaborate in teams to perform workshop operations following industrial safety	[KLO8] Communicate effectively on engineering activities with a range of audiences.	Workshop Exercises Discussions Lab Demonstration	Practical Work Report Observations Final Exam
...				

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to production engineering	1
2	Introduction to industrial safety	1
3	Engineering materials and Their properties	1
4	Engineering measurements	1
5	Metal casting processes	1
6	Sheet metal work and fitting	1
7	Joining of metals	1
8	Principals of machining	1
9	Carpentry	2
10	Automotive Engineering	2
11	Electrical Engineering	2
12	**Practical** Turning	3
13	**Practical** Milling,	6
14	**Practical** Drilling,	6

15	**Practical** Shaping	6
16	**Practical** Sheet metal working	6
17	**Practical** Welding	6
18	**Practical** Metal casting	6
19	**Practical** Forging	6
20	**Practical** Carpentry and Model Making	6
21	**Practical** Automobile	4
22	**Practical** Electricity	6
Total		75

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1	Practical work and assignments	Weekly	5%
2	Quizzes	Weekly	10%
3	Midterm-1	5-6	15%
4	Midterm-2	11-12	15%
5	Practical Exam	14	15%
6	Final exam	15	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1.References and Learning Resources

Essential References	Introduction to Manufacturing Processes (2019) Levi O'Brein ISBN-10: 1682857425 ISBN-13:978-1682857427 Introduction to Workshop Technology (2023) Harvinder Singh ISBN-13:979-8375176581
Supportive References	Fundamentals of Modern Manufacturing: Materials, Processes and Systems, International Adaptation (2021) Mikell P. Groover ISBN-10: 1119706424

	ISBN-13:978-1119706427
Electronic Materials	**Websites on the internet that are relevant to the course topics** and Lecture notes on blackboard, Videos
Other Learning Materials	**Multimedia associated with the text books and the relevant websites**

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom Mode: • Classroom with 50 seats • Laboratory with 25 seats E-Learning mode • Laptop/Desktop, internet connectivity Audio-visual system, mic, headphone
Technology equipment (projector, smart board, software)	• Laptop / Computer system Multimedia teaching aids – LCD Projector speakers
Other equipment (depending on the nature of the specialty)	**A production engineering Workshops are essential for carrying out the required training related to the course topics as described above, that includes the machines, tools, and measuring devices**

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student and faculty	Indirect through surveys
Effectiveness of students assessment	Faculty and Quality Committee	Direct through Rubrics
Quality of learning resources	Student and faculty	Indirect through surveys (Student, faculty)
The extent to which CLOs have been achieved	Faculty and Quality Committee	Direct (through Rubrics)
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods(Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Reviewed by Curriculum Committee Approved by Quality Committee
REFERENCE NO.	
DATE	