

COURSE PLAN

FIRST: BASIC INFORMATION

College

College : Faculty of Engineering Technology

Department : Mechanical Engineering Department

Course

Course Title : Engineering Workshops

Course Code : 020200109

Credit Hours : 1 (0 Theoretical, 1 Practical)

Prerequisite :

Instructor

Name :

Office No. :

Tel (Ext) :

E-mail :

Office Hours :

Class Times

Building	Day	Start Time	End Time	Room No.
00	00	00	00	00

Text Book

Title : • Mechanical Workshop Practice, JOHN, K. C.
• Workshop/Manufacturing Practices: (As per AICTE Model Curriculum 2018),
B.L Juneja

References

1. Automobile Electrical and Electronic Systems essential theory and practice, Tony Tranter

SECOND: PROFESSIONAL INFORMATION

COURSE DESCRIPTION

This course specifies a knowledge of basic manual skills, includes measuring devices, lathes, welding, metal working and electrical wiring etc., and it also provides various basic tools skills using in automotive maintenance field.

COURSE OBJECTIVES

The objective of this course is to enable the student to do the following:

- Develop working competence of the basic knowledge of measuring instruments, includes of length, angle, taper etc.
- Develop working competence of a metal working including cutting, drilling, and screw work.
- Develop working competence of common lathe operation and basic work



- Develop working competence of basic Arc and gas welding.
- Develop working competence of basic electrical wiring.

COURSE LEARNING OUTCOMES

By the end of the course, the students will be able to:

- CLO1. **Apply** basic safety requirements at workshops
- CLO2. Use measuring instruments, and measure length, angle, taper
- CLO3. **Perform arc and gas welding**
- CLO4. **Perform** common lathe operation and basic work
- CLO5. Work with metal parts including cutting, drill and screws
- CLO6. **Perform** an electrical wiring

COURSE SYLLABUS

Week	Topic	Detail Topic	Related LO and Reference (Chapter)	Proposed assignments
1	Safety Training and Engineering Workshops overview	<ul style="list-style-type: none"> • Safety Training <ul style="list-style-type: none"> - Fire safety - Electrical safety - First aid • Engineering Workshops Overview <ul style="list-style-type: none"> - Material properties - Measuring devices - Machine tool 	CLO1	
2	Measuring Devices	<ul style="list-style-type: none"> • Use of basic measuring instrument • Vernier Caliper, Height Gauge, Dial Gauge, Micro Meter, Etc. • Length • Angle • Taper etc. 	CLO2	Practice report
3	Mechanical Workshop 1	<ul style="list-style-type: none"> • Arc Welding <ul style="list-style-type: none"> - Arc welding material preparation - Arc welding equipment preparation - Bead stacking - Tidy up after work 	CLO3	Practice report
4	Mechanical Workshop 2	<ul style="list-style-type: none"> • Arc Welding <ul style="list-style-type: none"> - Weave bead - Fillet weld 	CLO3	Practice report
5	Mechanical Workshop 3	<ul style="list-style-type: none"> • Gas Welding: <ul style="list-style-type: none"> - Gas welding machine components - Pressure regulator adjustment - Gas welding, cutting 	CLO3	Practice report
6	Mechanical Workshop 4	<ul style="list-style-type: none"> • Lathes <ul style="list-style-type: none"> - Lathe structure - Operation principle - Bite Tool selection - Basic work 	CLO4	Practice report

7	Mechanical Workshop 5	<ul style="list-style-type: none"> Lathes - Simple shape work: - Inner/outer diameter - Drilling - Knurling 	CLO4	Practice report
8	Mid Exam			
9	Mechanical Workshop 6	<ul style="list-style-type: none"> Lathes - Grooving work: - Internal/external grooving 	CLO4	Practice report
10	Mechanical Workshop 7	<ul style="list-style-type: none"> Lathes - Taper work: - Taper 	CLO4	Practice report
11	Mechanical Workshop 8	<ul style="list-style-type: none"> Turning workshop. Metal Cutting 	CLO5	Practice report
12	Mechanical Workshop 9	<ul style="list-style-type: none"> Drill works Screw works, etc. 	CLO5	Practice report
13	Electrical Workshop 1	<ul style="list-style-type: none"> Electrical Wiring - Current, - Voltage, - Resistance - Three effects of electric current: heating effect, magnetic effect and chemical effect ETC. 	CLO6	Practice report
14	Electrical Workshop 2	<ul style="list-style-type: none"> Electrical circuits and components - Diode - Transistor - Semiconductor 	CLO6	Practice report
15	Electrical Workshop 3	<ul style="list-style-type: none"> - Photodiode - Darlington Transistor - Thyristor - Thermistor - Photoconductive cell 	CLO6	Practice report
16	Final Exam			

COURSE LEARNING RESOURCES

The effectiveness of teaching in this course depends on making students familiar with the basic manual skills, such as measuring devices, lathes, welding, metalworking and lathes etc., which will provide the students with various basic tools skills using in automotive maintenance field.

Teaching methods:

- Exercising and practicing: by training students to do all the practical works using the right instrument and to identify the type of exercise.
- Online research skills, watching related videos such as you tube, on topics related to course objectives and recent developments in the field of specific work.
- Learning skills and adaptability: Developed by transferring students and reconfiguring work teams to enable them to adapt to other individuals from time to time.

ONLINE RESOURCES

- Mechanical Workshop textbook-Google searching

ASSESSMENT TOOLS

(Write assessment tools that will be used to test students ability to understand the course material and gain the skills and competencies stated in learning outcomes)

ASSESSMENT TOOLS	%
Quizzes	
Researches and Reports	10
Participation	
Oral Exams	10
Activities/attendance	
Presentation	
Mid Exam	40
Final Exam	40
TOTAL MARKS	100

THIRD: COURSE RULES**ATTENDANCE RULES**

Attendance and participation are extremely important, and the usual University rules will apply. Attendance will be recorded for each class. Absence of 10% will result in a first written warning. Absence of 15% of the course will result in a second warning. Absence of 20% or more will result in forfeiting the course and the student will not be permitted to attend the final examination. Should a student encounter any special circumstances (i.e., medical or personal), he/she is encouraged to discuss this with the instructor and written proof will be required to delete any absences from his/her attendance records.

GRADING SYSTEM**Example:**

0 – 49 Fail
50 – 100 Pass

REMARKS

{The instructor can add any comments and directives such as the attendance policy and topics related to ethics }

COURSE COORDINATOR

Course Coordinator: Dr. Suleiman Abu-Ein

Signature:

Date:

Department Head:

Signature:

Date: