



SUBJECT:	Engineering Technology
UNIT:	1
ASSIGNMENT:	3 – Controlled
TITLE:	Working in a factory
DATE SET:	17th April 2023
DEADLINE:	17th May 2023

General Instructions

- Lines provided for sub-questions (a) and (b) indicate the length expected in candidate's answers.
- Students are to autonomously answer sub-questions (c). Therefore, lines provided do **not** necessarily indicate the length and depth of the expected answer.
- Application criteria will be assessed in class.
- The time required to complete practical tasks will be communicated by the teacher.
- Answers may be either in English or in Maltese.

Candidate's Declaration of Authenticity

I, the undersigned, _____ (*Name and Surname*), declare that all the work I shall submit for this assignment will be my own.

I further certify that if I use the ideas, words, or passages from existing sources, I will quote those words or paraphrase them and reference them by making use of a reference system.

I am aware that should I submit work which is not mine, or work which has been copied from one or more sources, I will be penalised as per MATSEC Examinations Board policies related to plagiarism.

Candidate's Signature: _____

I.D. Card No.: _____

Date: _____

b. Outline the function of the tools and equipment identified in Question 1a.

Tool/equipment (i): _____

Function: _____

Tool/equipment (ii): _____

Function: _____

Tool/equipment (iii): _____

Function: _____

Tool/equipment (iv): _____

Function: _____

c. Describe a preventive measure for each of the following **TWO** tools. Each preventive measure can be used once.



www.amazon.com

Preventive measure: _____



www.toolstation.com

Preventive measure: _____

Question 2

C-3 (6 marks)

During the manufacturing of an airplane fuselage, different metals with different melting points need to be permanently joined together.

Welding	Brazing	Bonding Adhesive	Plastic welding
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a. Identify the ideal joining method to permanently join the two different pieces of metal firmly together from the ones provided in the word bank above.

Question 3

K-8 (4 marks)

- During manufacturing, the product should be finished off according to the set of requirements.
- Several finishing tools and equipment can be used for this task.

a. Identify the finishing tools given in Table 2.

Table 2 – Finishing tools

	Finishing Tools	Name
i.		
ii.		
iii.		
iv.		
v.		

(Source: <https://www.amazon.co.uk/>)

b. Match the finishing tool given on the left with the task on the right.



It is used to remove fine amounts of material from a workpiece starting from a rasp and finishing off with a fine one.



A device used to apply a coating of paint, ink, varnish, etc...



A power tool used to smooth surfaces by abrasion with sandpaper e.g. remove paint.



It is good at removing rust, corrosion, paint and polishing metals.



It levels out residue or remove excess of an applied product.

(Source: <https://www.amazon.co.uk/>)

c. Describe the following **FOUR** preventive measures when using finishing tools and equipment.

Work to laid down procedures

Tie back long hair and remove jewellery

Use suitable tools for the proper job

Visual inspection of the tool

SECTION B - PRACTICAL

Background Information

You are requested to follow a permanent joining process to manufacture the wood joint shown in Figure 1.

You are required to:

- Mark out the two given wood blocks.
- Cut the extra material as in Figure 2a and Figure 2b.
- Join the two pieces by gluing and making use of dowel. Trim off excess of dowels to finish exercise.

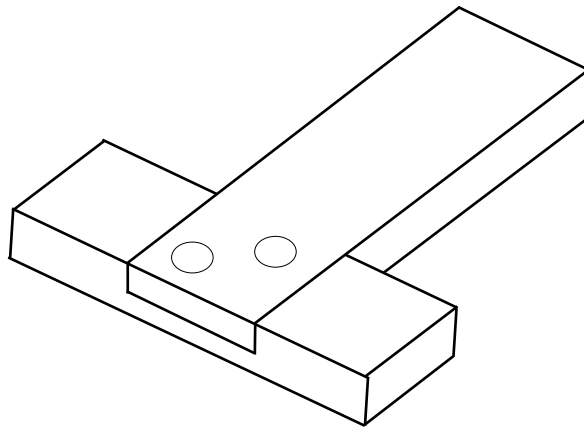


Figure 1

All the necessary tools, equipment and material required to conduct this exercise are provided by the teacher.

During this practical task, you should observe all Health and Safety Procedures and use your own adequate PPE.

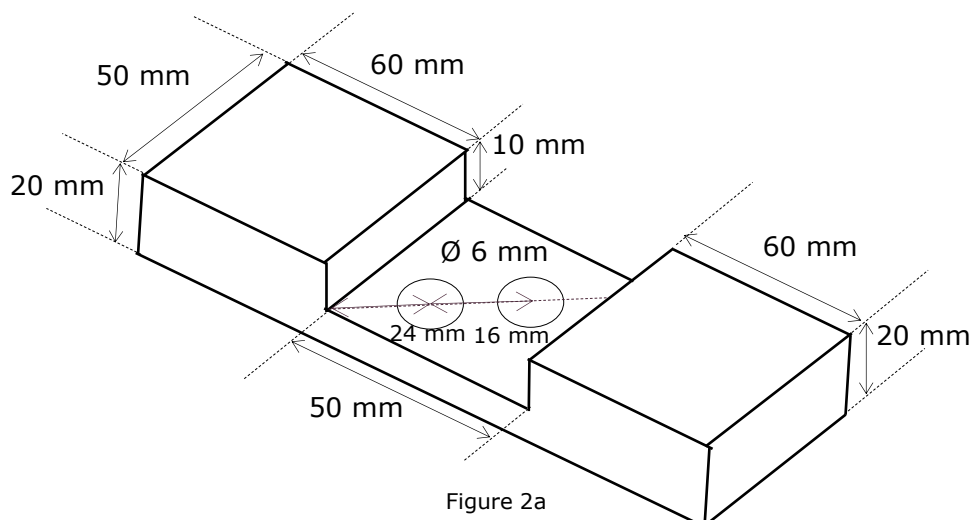


Figure 2a

SECTION B - PRACTICAL

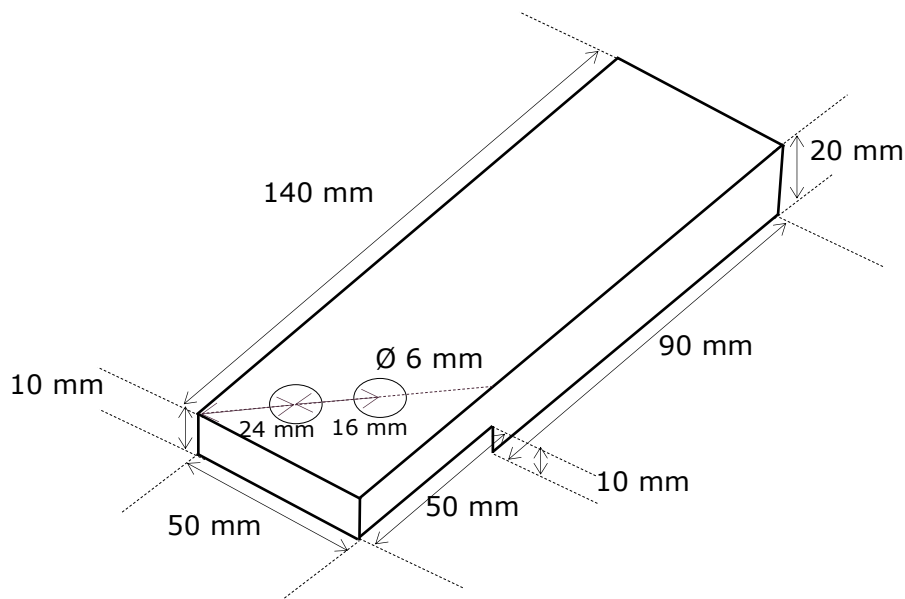


Figure 2b

Question 1

A-4 (10 marks)

- Choose the appropriate tools and equipment for the task.
(It is highly recommended that you prepare a list of the tools and equipment before the task.)
- Complete the Risk Assessment Sheet provided in Table 3.
 - Fill in **ONE** 'Risk' and **ONE** 'Person/s in danger' while doing a permanent joint;
 - Fill in **TWO** 'Existing control measures' when carrying out a permanent joining process;
 - Using the Likert scale below fill in the 'Risk Rating' and indicate **ONE** 'control measure required' when carrying out a permanent joining process.
- Use permanent joining tools and equipment to build the given project. Ensure precise and accurate work to a tolerance of $\pm 5\text{mm}$ and $\pm 3^\circ$.

During this practical task, you should observe all Health and Safety Procedures.

Name: _____

Class: _____

Table 3 – Risk Assessment Sheet

RISK ASSESSMENT SHEET							
Assessment by:			Assessment for:			Date:	
Activity	Hazard	Risk	Persons in Danger	Existing Control Measures in Place	* Risk rating	Control Measures required	
Permanent Joining Process	Wood dust from cutting wood	Skin/ Eye Irritation	_____	_____	_____	Use of safety glasses to avoid wood dust entering the eye	
	Drilling holes	_____	User	_____	3	_____	

Least severe

Most severe

*Risk Rating

1	2	3	4	5
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SECTION C - PRACTICAL**Background Information**

You are required to finish off the given wood block in Figure 3 to resemble wood block in Figure 4.

You are required to:

- round 4 corners as indicated and according to given dimensions
- refine by sanding all surfaces
- paint all sides but the base

All the necessary tools, equipment and material required to conduct this exercise will be provided by the teacher.

During this practical task, you should observe all Health and Safety Procedures and use your own adequate PPE.

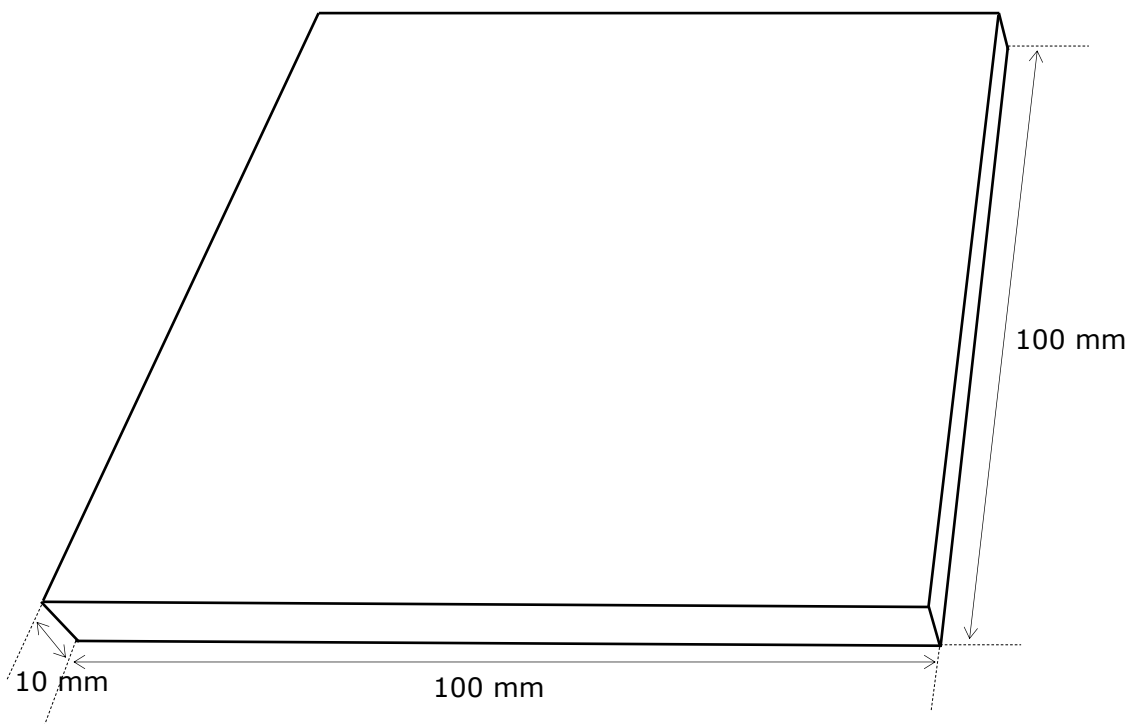
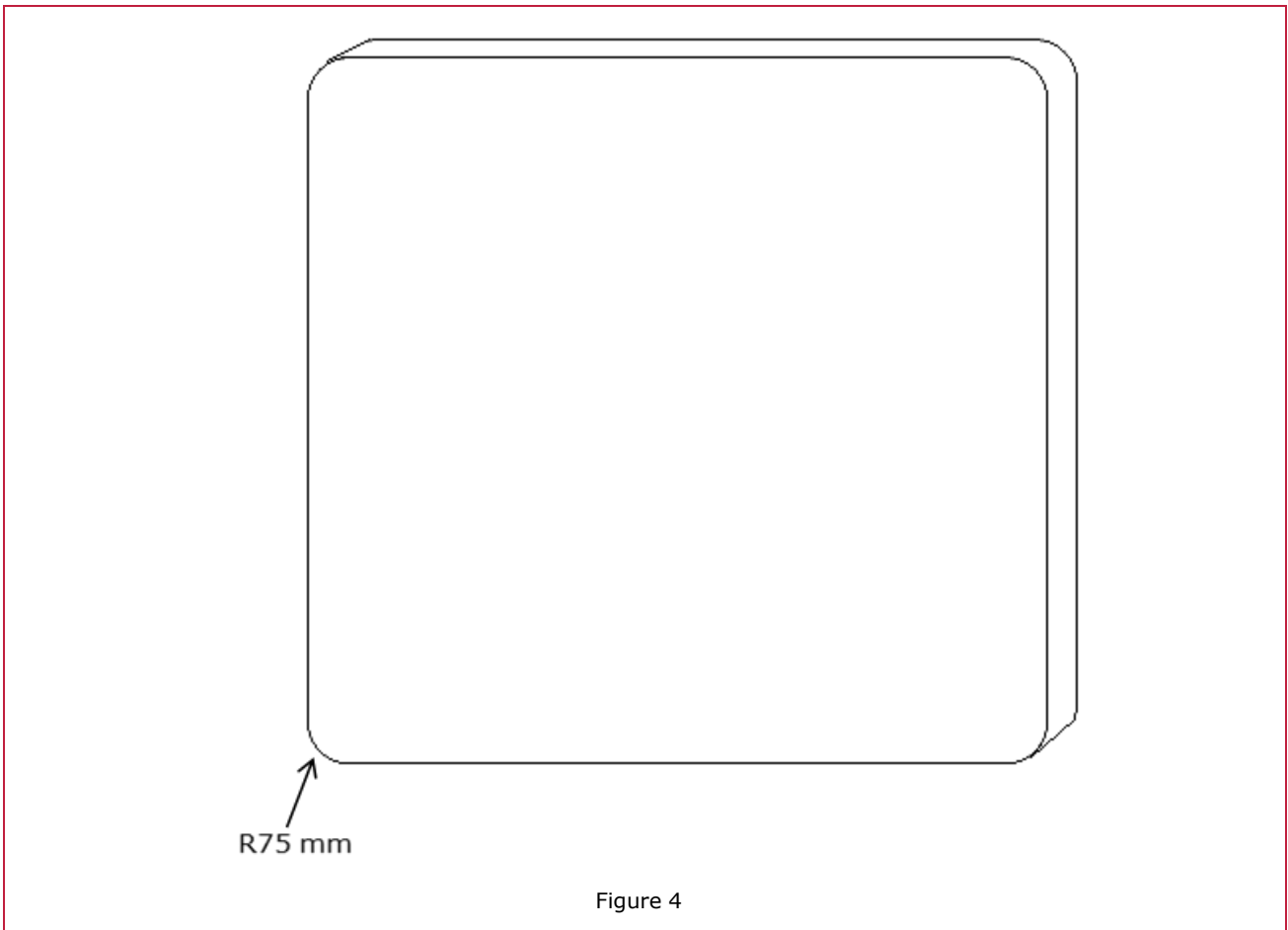


Figure 3

SECTION C - PRACTICAL**Question 1****A-5 (10 marks)**

- a. Choose appropriate tools and equipment in preparation for the task.
(It is highly recommended that you prepare a list of the tools and equipment before the task.)
- b. Complete the Risk Assessment Sheet provided in Table 4.
 - i. Fill in **ONE** 'Hazard' and **ONE** 'Risk' before the given finishing process;
 - ii. Fill in **TWO** 'Existing control measures' before the given finishing process;
 - iii. Using the Likert scale below fill in the 'Risk Rating' and indicate **ONE** 'control measure required' before the given finishing process.
- c. Use appropriate finishing tools and/or equipment to finish off the given project. Ensure that you perform the correct processes.

During this practical task, you should observe all Health and Safety Procedures.

Name: _____

Class: _____

Table 4 – Risk Assessment Sheet

RISK ASSESSMENT SHEET						
Assessment by:		Assessment for:			Date:	
Activity	Hazard	Risk	Persons in Danger	Existing Control Measures in Place	* Risk rating	Control Measures required
Finishing Process	_____	Falling/fractures and injuries	User/colleagues working in nearby areas	_____	_____	_____
	Paint fumes	_____	User/colleagues working in nearby areas	_____	2-4	Work in well ventilated area

Least severe

Most severe

*Risk Rating

1	2	3	4	5
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