ENGG 101
ENGINEERING PROJECT PREPARATION

Course Handout

For

Workshop Practice

Kathmandu University

School of Engineering

Department of mechanical Engineering

Dhulikhel, Kavre.

Course Code: ENGG 101 **Credit:** 2 cr Hr

Course Title: Workshop Technology

Objective:

- To introduce student to the concept of the project work.
- To give practice in basic engineering skills.
- To work on an small constructional Project to use the skills and knowledge they have acquired.

Course Content:

Introduction:

Definition of project, Practical exercise to draw out importance of setting goals , planning , working as a team , and assessing final achievements.

Workshop Skills:

Various workshop skills such as metal working, woodworking , use of hand tools , drilling and welding .

Mini project :

Use of the above skills to work on a small constructional project in a team .

Course plan:

The first week will be classroom based and introduction part of the course will be covered. Second part of the course is in the mechanical workshop. This hand out describes the exercise to be done in mechanical workshop.

Evaluation policy:

Continuous in semester evaluation: 80 Marks

Quality of the job: 45

Report: 20

Viva: 10

Attendance and behavior: 5

Final Written test: 20

Workshop Rules and regulations:

Workshop disciplines must be maintained to run the work smoothly and safely. The following rules and regulations have been adopted for this purpose. The students should follow these rules and regulations strictly in the workshop.

1. **Workshop Hours:**
   One workshop class consists of two to three normal regular classes. The student must come in workshop at proper time and leave the workshop at the end of the period. No extra time will be given for those who cannot complete the job at time.
2. **Attendance :**
   Workshop attendance is compulsory. No extra arrangement will be made for those who missed workshop practice class.
3. **Workshop Practice:**
   The student will be assigned to different job in shops on rotational basis.
   Student will be evaluated after every workshop practice classes according to:
   a. Their performance and manner of working in workshop.
   b. Quality of the finished product.
   c. Written report about the job performed.
   d. Surprise test.
   e. Viva –voice.
4. **Report :**
   The report must be submitted with the following contents in standard A4 size paper, single sided and must be enclosed in standard file.
   a. Introduction of the practice with application.
   b. List of tools used with their sketch and use.
   c. Materials used.
   d. Sequence of operation.
   e. Safety precaution.
   f. Quality control report with your report.
   g. Cost estimation of job.
   h. Drawing.
   i. Title Page format is enclosed herewith. It should be submitted with all the required information.
5. **Workshop Apron /shoes /Gloves / Goggles:**

   Wear workshop apron, shoes, safety gloves and safety goggles while working in the workshop areas. Student without above mentioned items will not be allowed to practice in workshop. For workshop long full sleeve cotton apron of dark blue colour is recommended.
6. **Tidiness:**
   Students always keep their working tables and surrounding area neat and clean.
   The working tools, measuring tools and job piece should be always arranged in proper manner in the working table. Before leaving the workshop keep your table and surrounding area free from scrap and keep all the tools at proper place.
7. **Behavior :**
   Disorderly behavior is not permitted in permitted in the workshop. Sitting on a desk, leaving coats, sweater, on the desk and unnecessary wondering around the workshop are strictly prohibited.

Never use the machine tools without having proper knowledge and absence of instructor to avoid accidents.

8. **Injuries and accidents:**
   Report all accidents and injuries immediately and have them treated.

9. **Loss and breakage :**
   Even the minor breakage or loss of tools should be reported to the instructor in writing.

   The above mentioned rules and regulations should be strictly followed .Failure to comply with these rules will result in expulsion from workshop.

Safety guidelines:

1. FULL SLEEVE APRON MUST BE WORN.

2. SAFETY FOOTWEAR MUST BE WORN WHEN WORKING IN THE WORKSHOP.

3. ASK WORKSHOP SUPERVISOR BEFORE USING EQUIPMENT. YOU MUST HAVE BEEN INDUCTED AND DEEMED COMPETENT!

4. VISITORS MUST REMAIN WITHIN MARKED WALKWAYS.

5. LONG HAIR MUST BE TIED BACK.

6. CLEAN MACHINES AFTER USE.

7. TAKE CARE WHEN USING COMPRESSED AIR.

8. HEARING PROTECTION AND SAFETY GOGGLES SHOULD BE WORN WHEN USING MACHINERY.

9. WORKING ALONE AFTER HOURS IS NOT PERMITTED (Normal Workshop Hours, 9:00 AM – 4PM)

10. HEARING AID, GOVES AND OTHER PERSONAL PROTECTIVE ACCESSORIES MUST BE TAKEN BY INDIVIDUAL.

11. KEEP PATIENCE WHILE WORKING.

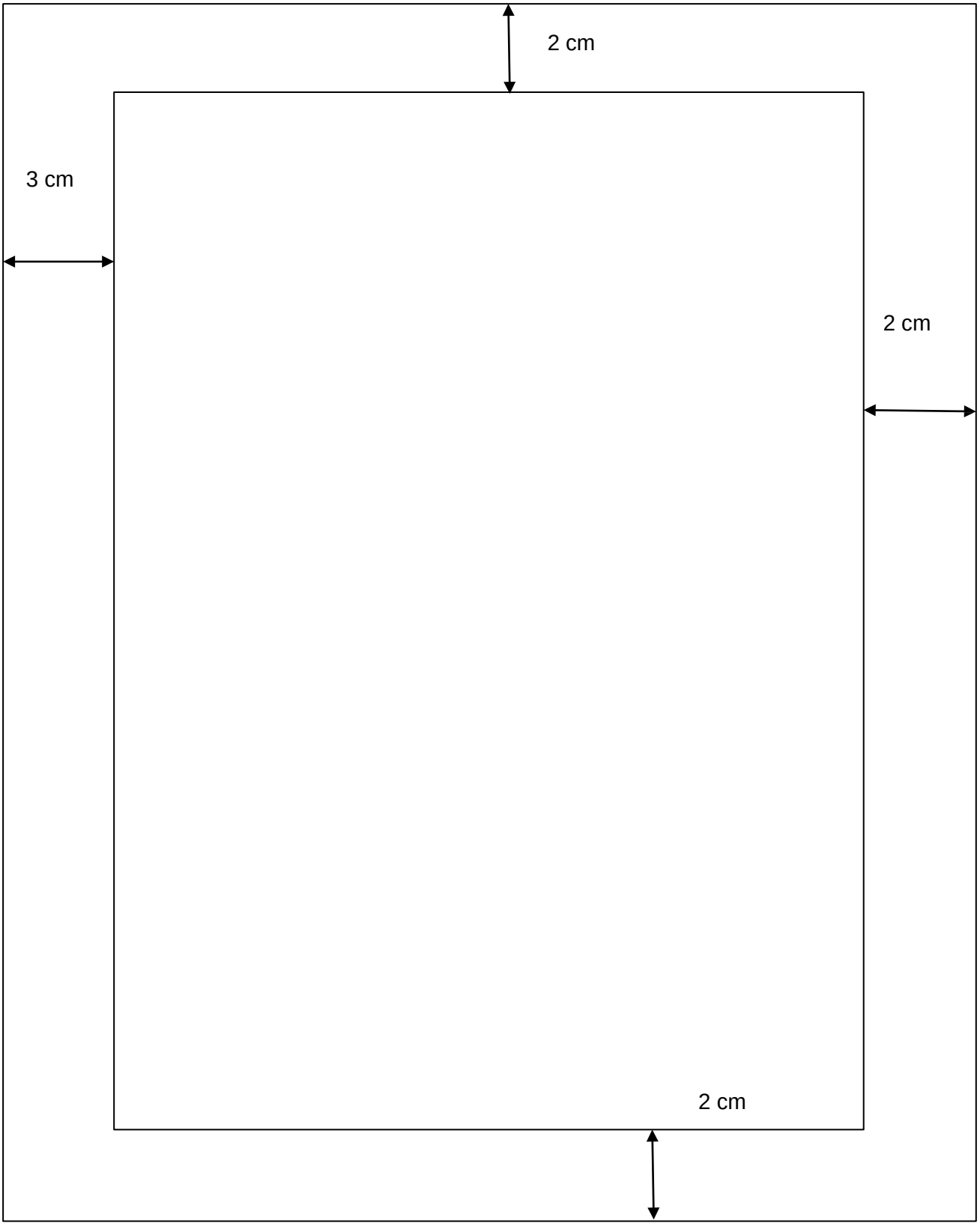
12. DO NOT PLAY WITH TOOLS, AND EQUIPMENT WITHOUT PROPER KNOWHOW.

13. DO NOT LET THE ELECTRICAL DEVICE PLUGGED AND UNATTENTED.

14. ALWAYS USE MACHINES AND EQUIPMENTS UNDER SUPERVISION ON SHOP SUPERVISOR.

15. DO NOT BUILD OVERCONFIDENCE...

Format for top sheet of report on workshop practices (ENGG 101)



Report on

Workshop Technology
(ENGG 101)

Submitted by:

Name: ……..
Roll No: ……
Group: ……
Department: ……..

Date of performance:
…….
Date of Submission:
…….

Submitted to:

General Mechanical Workshop
Kathmandu University
School of Engineering
Department of mechanical Engineering
Dhulikhel, Kavre.

Exercises (Jobs)

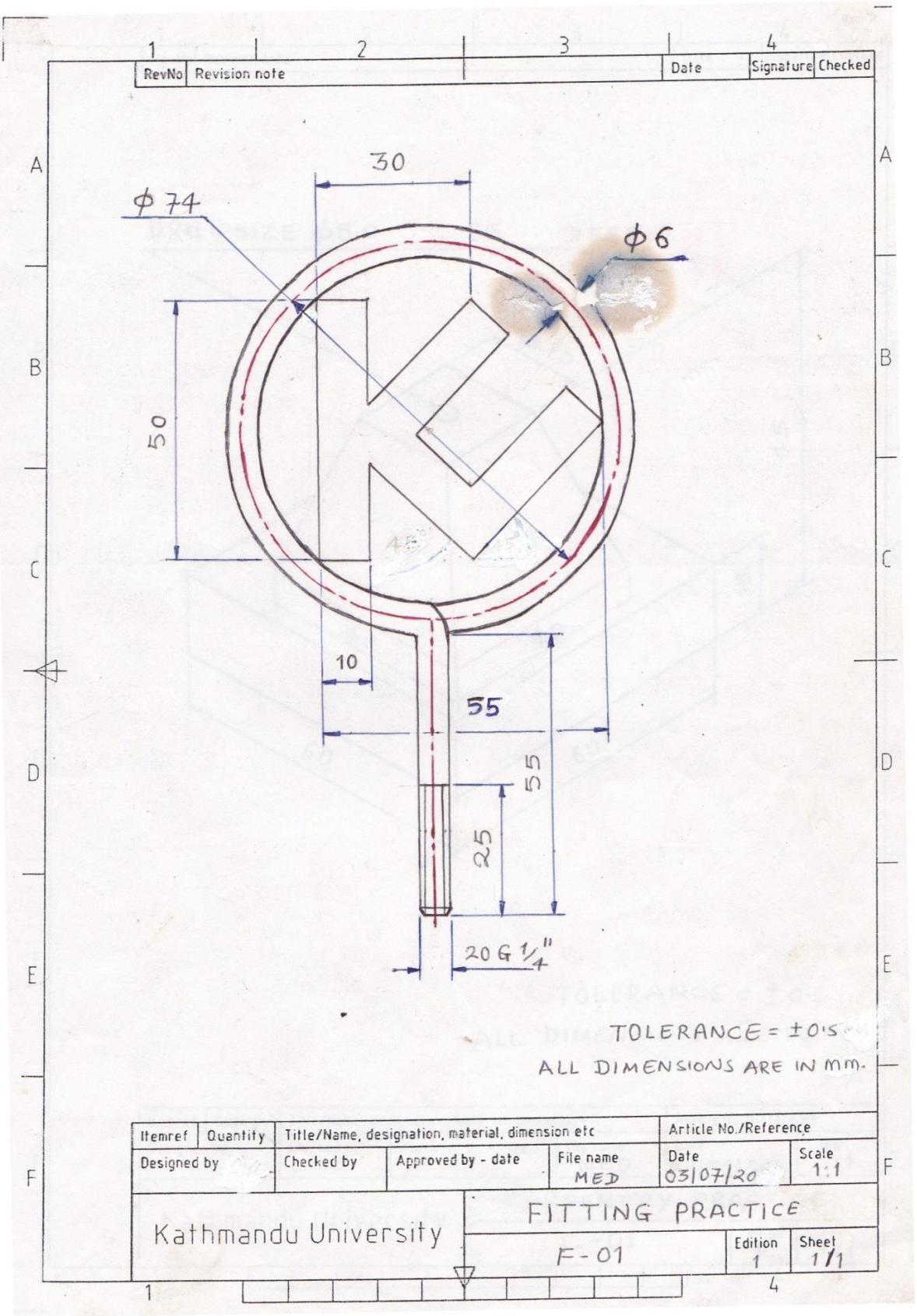
Job 1: Fitting Practice
Practices: Measuring, Marking, cutting, filling, drilling, bending, and joining metals.
Time Allocated: 4 lab day (12 hours)

Job 2: Carpentry Practice
Practice: Measuring, marking, cutting, drilling, finishing, and painting on wood job piece.

Time Allocated: 2 Lab days (6 hours)

Job 3: Sheet metal practice

Practices: Measuring, marking, folding, bending, drilling, riveting, surface development of sheet metal job.
Time Allocated: 2 Lab days (6 hours)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Signature
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TOLERANCE = ±0.5
ALL DIMENSIONS ARE IN mm.
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Title/Name, designation, material, dimension etc
Article No./Reference
Designed by
Checked by
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Kathmandu University
FITTING PRACTICE
F-01
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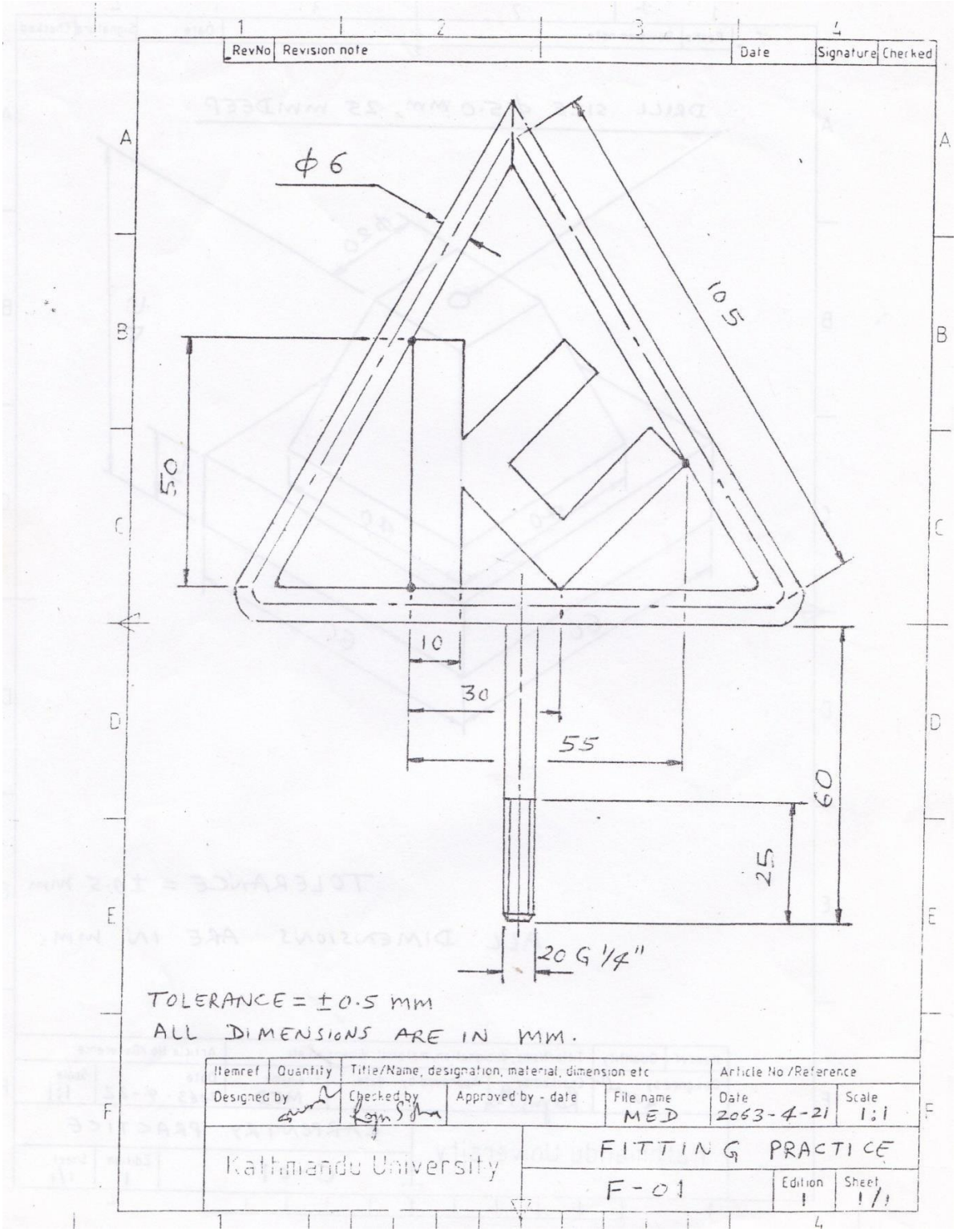
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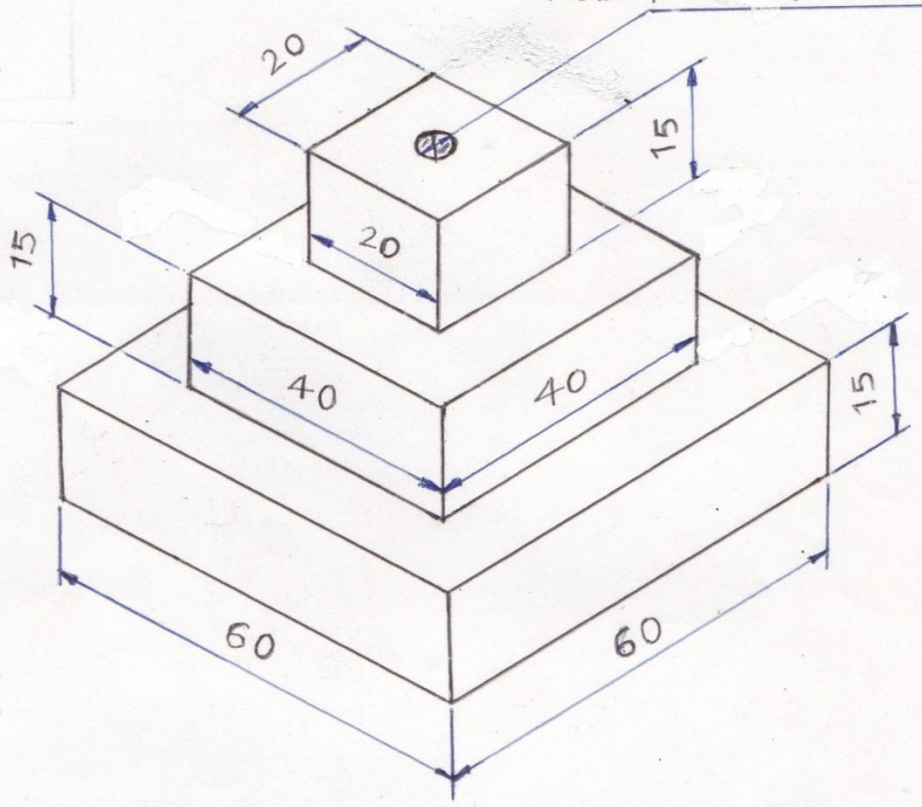

TOLERANCE = ± 0.5 mm

ALL DIMENSIONS ARE IN mm.

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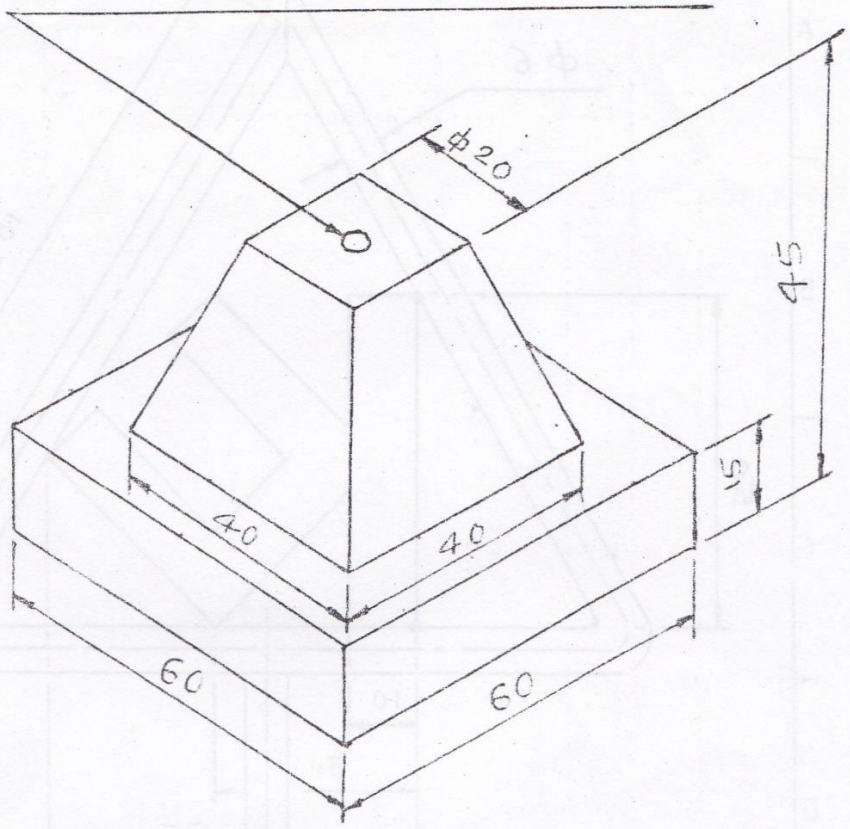
Kathmandu University		CARPENTRY PRACTICE				
		C-01			Edition 1	Sheet 1/1

RevNo	Revision note	Date	Signature	Checked

DRILL SIZE ϕ5.0 mm, 25 mm DEEP



TOLERANCE = ±0.5 mm

ALL DIMENSIONS ARE IN mm.

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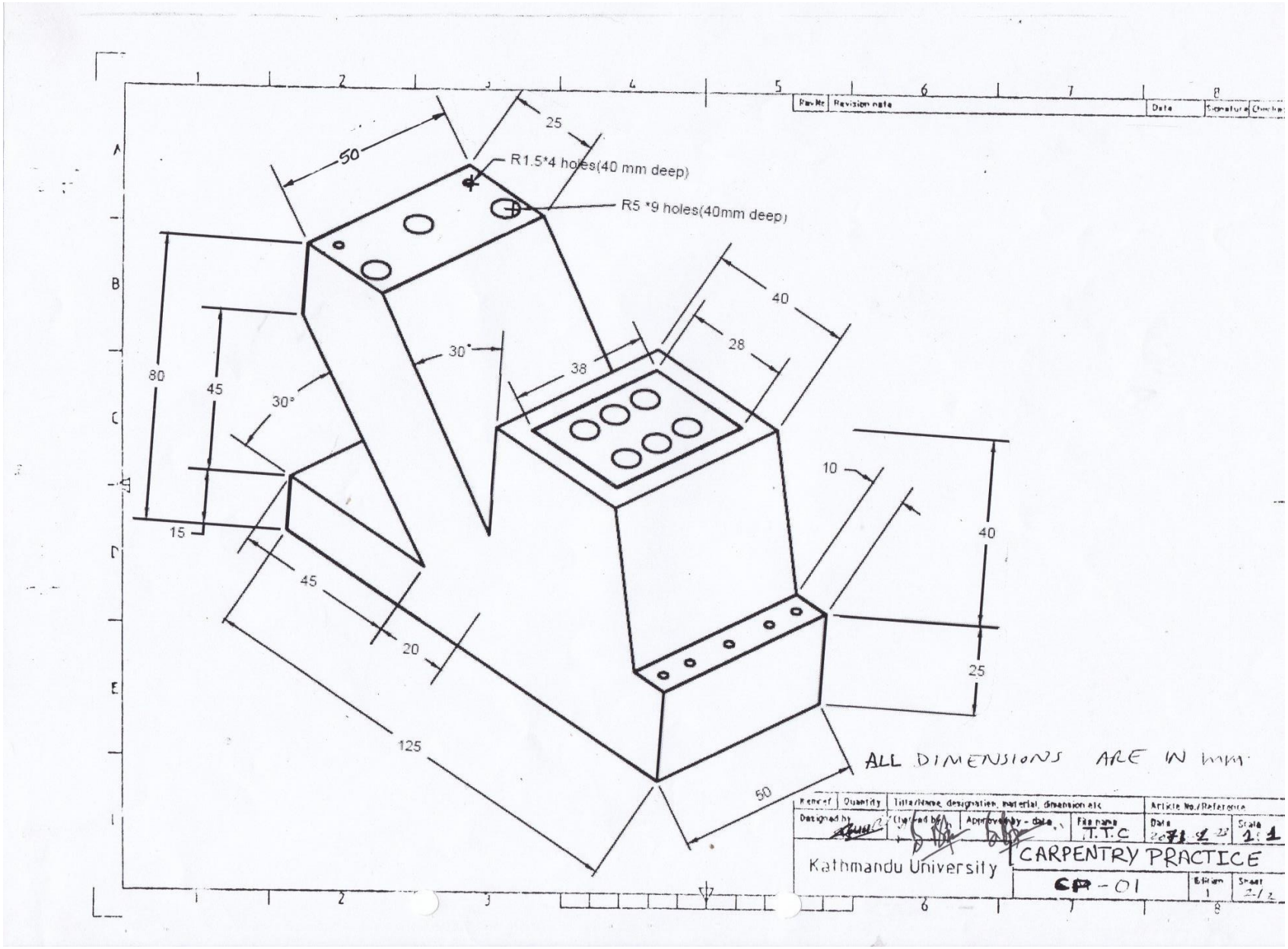
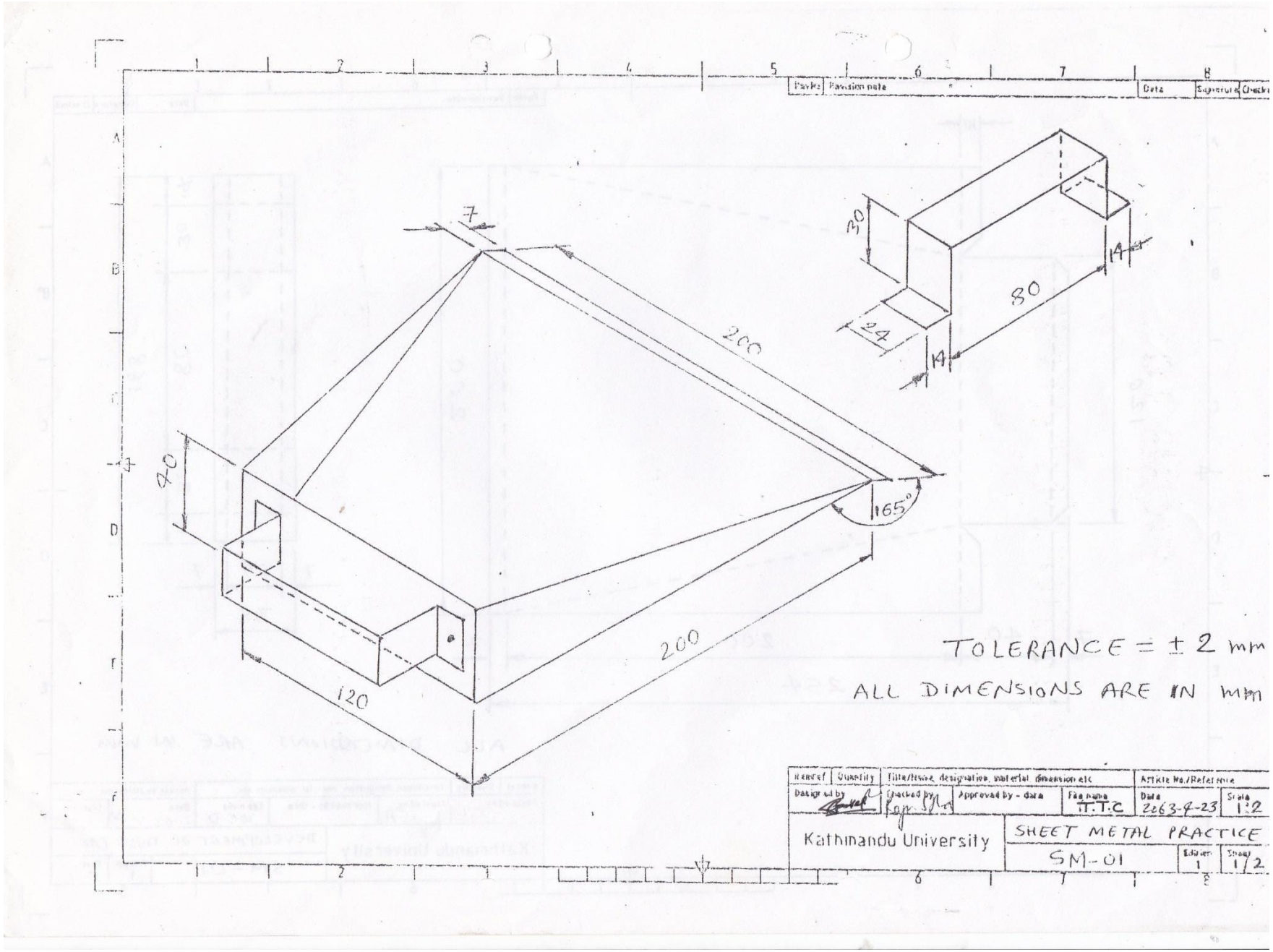
		C-01			Edition 1	Sheet 1/1


25
50
R1.5*4 holes(40 mm deep)
R5 *9 holes(40mm deep)
40
28
30°
38
80
45
30°
10
40
15
45
20
25
125
50
ALL DIMENSIONS ARE IN mm
Kathmandu University
CARPENTRY PRACTICE
CP - 01


7
200
70
165°
200
120
30
14
80
24
14
TOLERANCE = ± 2 mm
ALL DIMENSIONS ARE IN mm
Kathmandu University
SHEET METAL PRACTICE
SM-01
T.T.C
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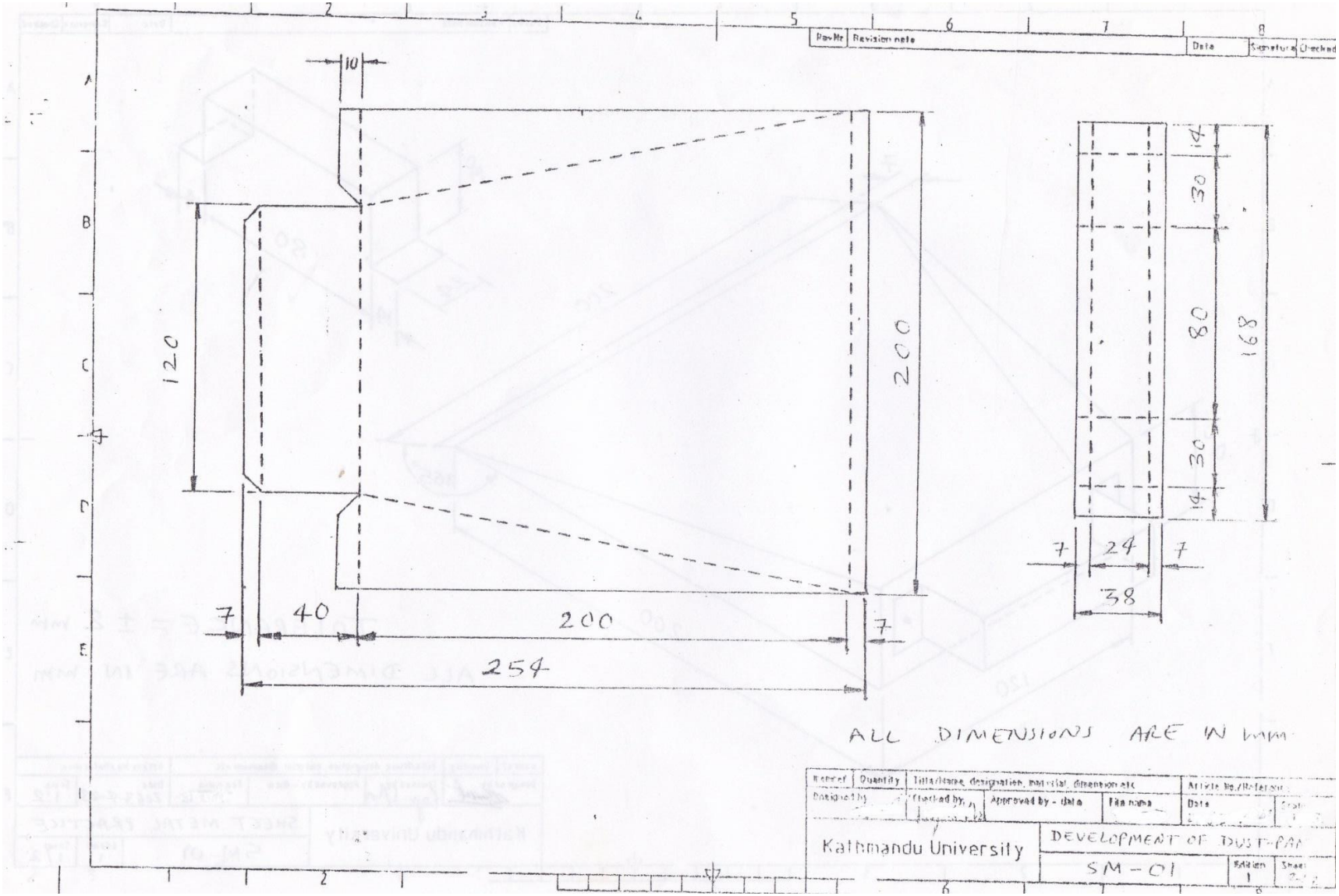
1:2
1/2


10
120
200
7
40
200
7
254
14
30
80
168
30
14
7
24
7
38
ALL DIMENSIONS ARE IN mm
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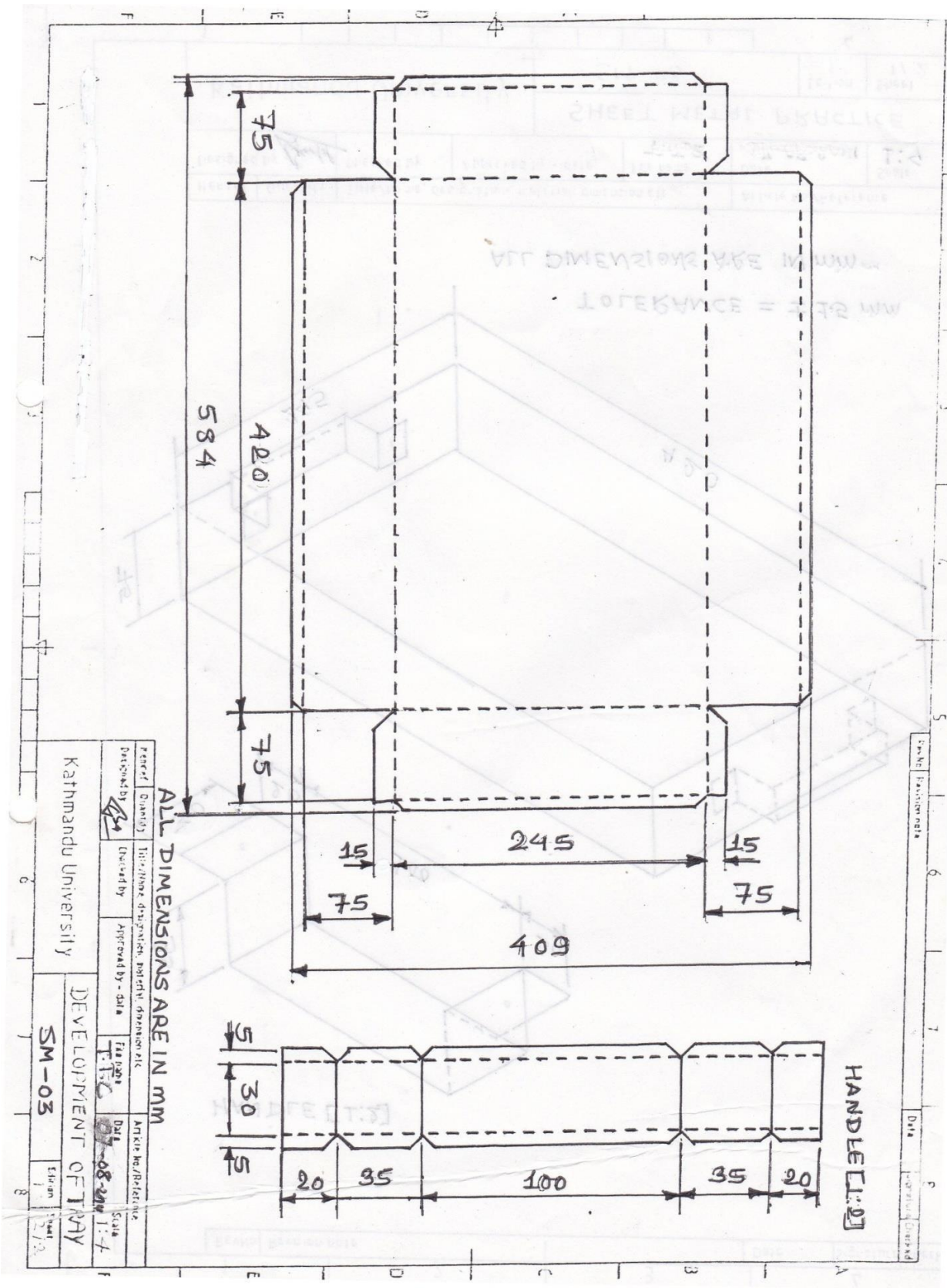
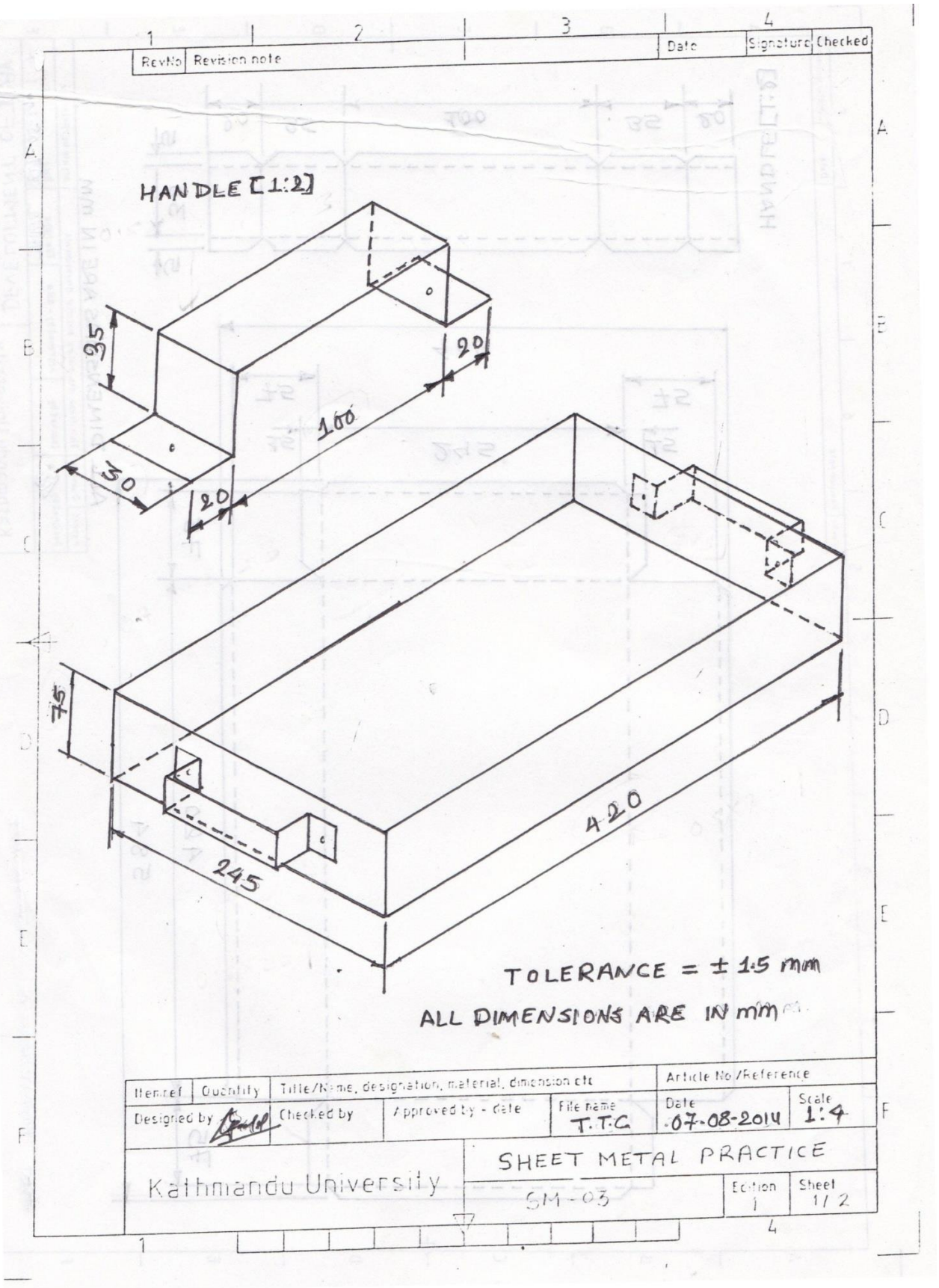
DEVELOPMENT OF DUST-PAN
SM-01


75
584
420
75
15
245
15
75
75
409
5
30
5
20
35
100
35
20
HANDLE
ALL DIMENSIONS ARE IN mm
Kathmandu University
DEVELOPMENT OF TRAY
SM-03


HANDLE [1:2]
35
20
100
30
20
75
245
420
TOLERANCE = ± 1.5 mm
ALL DIMENSIONS ARE IN mm
Kathmandu University
SHEET METAL PRACTICE
SM-03
Scale 1:4
Date 07-08-2014
Sheet 1/2