

Name: **Shreshth Khosla**

Report for the time period: **08.03.2021-12.03.2021**

Internship: **Scientific Programming**

My scientific programming week started with HTML overview and covered all of its related topics during then.

On the first day, I explored the different uses and the functionality of HTML. I read some articles and documents about various elements & tags. I read about tags and their uses, like `<br>` tag, `<hr>` tag. I also learnt font size changing of the text. Our first job was to practice on a webpage, using the knowledge I gained from the mentioned resources. The tasks were foundational & informative. I explored four articles and deciphered about various basic and advanced tags.

In next stage, I focused on designing our webpage task. The fact that I could enhance our template or website was very intriguing. I assimilated how to change the font size, color, add background and color gradient using `<style>` tag. After this, I transformed my webpage using various other elements such as `<header>`, `<nav>`, `<footer>`, and `<section>`, etc. These tags help to make different sections in a webpage and give it a more aesthetic look. Continuing my learning, I studied further on how to add images, videos, and lists to the webpage. I further enhanced those by adding a border or changing image size. I finished all the given tasks and gained more knowledge by doing further related assignments.

After finishing my day assignments, I started preparing for the upcoming topics. For that, I had sufficient study material. The topic & questions were related to designing and developing the tables. I made two types of tables (with and without border). As some of the tags were more advanced and more difficult, I researched further & reached out to more websites, which I found very helpful.



## Cities

### Example

  Lorem ipsum dolor, sit amet consectetur adipisicing elit. Quis nihil animi repellat sed! Iure perferendis ipsum eligendi natus laborum blanditiis exercitationem recusandae ipsa dicta qui? Voluptatum nihil quisquam fugiat cumque!

Footer

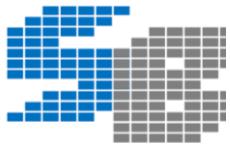
I started my next day by creating some tables and styling them appropriately. After making and understanding the tables, I proceeded to next article about `<colspan>` and `<rowspan>` tag. The `<colspan>` tag is for merging columns according to the user. Similarly, the `<rowspan>` is for combining rows. The task was to create a table and use `<colspan>` & `<rowspan>` tags, add images in-between and write about those in a paragraph. After learning and completing the job, I read the topic, symbol elements of HTML like mathematical, technical, and currency symbols, as such signs are typically not on a basic keyboard. Every such element is unique and has a particular number to it or name. After this, I used the `<iframe>` tag to learn how to link webpages.

This tag could be used to link different websites and different sources on the internet to our webpage

From the next day, I started studying for the new topics related to drawing shapes (using CSS). Later, I was introduced to CSS (Cascading style sheets) by my mentor.

I started doing my research more on CSS and its proper uses from the next day. I read some documents related to CSS that had all the information about CSS tags. The advantage of using CSS is, the format and style of the webpage could be changed without disturbing the HTML file. From the sources, I learned how to add CSS to HTML using three different ways. First, internal style, is defined in the `<head>` section of HTML within a `<style>` element. Second, inline CSS, it uses `<style>` tag. Third, external link, is used to add an external style sheet.

The following day, the last day of my internship, I gained more knowledge about CSS and its selectors. A selector is a vast topic to cover, with many different attributes. Then, I proceeded with further topics of backgrounds, margin, padding, and borders. Later, I started doing my final task of the day, to make a payment form using CSS and HTML. The job was to include the contact details and the billing address of the user. At the end of this task, I completed my internship.



← → ⌂ ⌂ File | C:/Users/samit/Desktop/payment%20form.html#

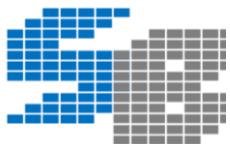
Responsive Checkout Form

Please enter the following details.

<b>Billing Address</b>		<b>Payment</b>	
Full Name Shreshth Khosla		Accepted Cards 	
Email ssss@example.com		Name on Card Shreshth Khosla	
Address xxxx Ground floor		Credit card number 1111-2222-3333-4444	
City delhi		Exp Month March	CVV 352
State Delhi	Zip 00000	Exp Year 2021	
<input checked="" type="checkbox"/> Shipping address same as billing			
<a href="#">Continue to checkout</a>			

Date and Name of Teacher:	Stamp and Signature
Date and Name of Advisor: <b>Rohit Sarabhai</b> Managing Director Sarabhai Information Technology <a href="mailto:md@sarabhait.com">md@sarabhait.com</a> +91 9871104326	Stamp and Signature  <i>S. Rohit Sarabhai</i> For Sarabhai Information Technology Pvt. Ltd. Director

Registered Office: **SARABHAI INFORMATION TECHNOLOGY PVT. LTD.**  
B-11, Guru Nanak Apartments, West Enclave, Pitampura, Delhi-34,  
[www.sarabhait.com](http://www.sarabhait.com).



## Weekly Proof of Internship

Name: Shreshth	Surname: Khosla	Week: 08.03.2021-12.03.2021 Work: Scientific Programming
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### Monday

- Learnt about the basics of developing a website using html and its features.
- Worked with the elements and the attributes of html.

### Tuesday

- Studied about designing the webpage
- Designed and developed Table

### Wednesday

- Learnt about more different attributes of tables
- Embedded external and internal links to the webpage

### Thursday

- Worked with CSS
- Ways to add CSS to HTML

### Friday

- Made a project related to CSS and HTML

### Remarks:

**Verified and Checked the work product.**

All information given above is correct.

Date, Name, Stamp, Signature of Mentor:

Date, Name, Stamp, Signature of Advisor:

For Sarbhai Information Technology Pvt. Ltd.

**Rohit Sarbhai**

Managing Director

Sarbhai Information Technology

[md@sarbhait.com](mailto:md@sarbhait.com)

+91 9871104326



Director



Freshman Institute

# Weekly proof of internship at Freshman Institute

Name: Khosla	Given Name: Shreshth	Group: 1g	Week: 02.01.20 - 03.01.20
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Internship: Mechanical Workshop	Student ID-Number FH Aachen: 3256391	
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Type of work carried out: (in some headwords)

Monday

- Holiday

Tuesday

- Holiday

Wednesday

- Holiday

Thursday

- Learned about the usage of vernier Caliper and how to take readings using it
- Familiarised myself with process of bending wires

Friday

- Continued with the bending of wires using machines
- Engraved lines using needles and vernier height gauge

Remarks:

All information given above is correct.

Date, Name, Stamp, Signature of Teacher:

05.01.20 U. Kommer



Date, Name, Stamp, Signature of Advisor:

28.01.2020

L. Hultenkremer

FH Aachen

Campus Jülich

Metall Werkstatt

nach Stichprobenkontrolle anerkannt

**In addition add a detailed report of about two pages per week!**

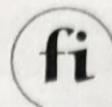
Name, Given Name: Khosla Shreshth

Student ID-Number of FH Aachen: 3256391

Report for the time period: 02.01.20 – 03.01.20

Internship: Mechanical Workshop

Group: 1g



Freshman Institute

This report describes the first week of our internship which took place in the mechanical workshop. On the first day, the instructors allotted our seats, tables and gave an introduction about themselves. They told us several rules regarding the workplace for example the workbench needs to be clean. Then we were given work shoes with extra protection that had steel in to save our feet if something injurious fell on them.

After this we started working and reading technical books that were issued to us. The instructor requested us to read the topic of the Vernier gauge which involved how to take measurements of a workpiece and read the numbers given on the Vernier scale. In addition, it included information about how to prevent or rectify errors if seen any. Later, after reading the theory in detail we were asked to make practical use of the Vernier caliper (Figure 1). We were given two different workpieces whose dimensions we needed to calculate with decimal places of 1 digit. After making the readings, we had to exchange the pieces with other students as everyone had workpieces of different dimensions and sizes. Then we had to write the final readings on a paper that was provided by the instructor.

After working with the Vernier gauge, the bending of wires was the next task that was designated to us (figure 2). First, we had to read the chapter related to tools that were required in the practical of bending of wires. The focus of the chapter was mainly on precision and the precautions that were prerequisite. Then we were supplied with aluminium and steel wires that had to be bent with flat head plier and we had to make 4 different shapes out of these wires. While doing the practical, I made couple of mistakes as I was unable to bend the wire properly, the instructor rectified the way I was using the plier.

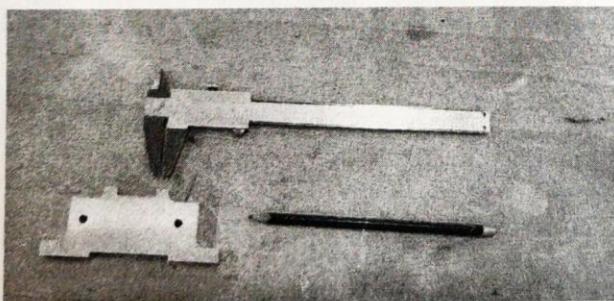


Figure 1: Vernier caliper

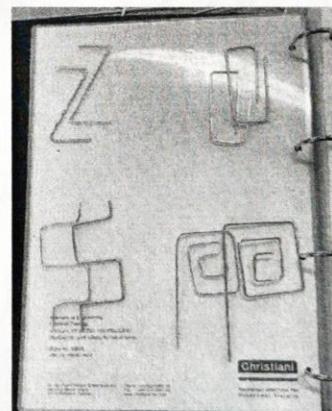


Figure 2: Bending of wires

The next day we continued with the left-over work from the previous day. The bending of steel wire was done by using a parallel jaw vice as steel wire was impregnable by hands. After completing the wire work, we were told to start reading the theory of a topic called scribing. It involves the transferring of dimensions from the a given standard source to the provided workpiece. There were two types of scribing technique, using needle by hand and Vernier height gauge which was explained by the instructor. After some time, we were given a

practical related to that. First, a square slate was given whose sides we had to blunt using a file (tool) which makes the sharp edges and the corners smooth so that our hand doesn't cut out. The process of filing was illustrated by the instructor and the angle at which we needed to move the file. It was restrained to use the file tool excessively as it might change the dimensions of the given workpiece. When the filing was done, we continued with making lines of certain dimensions on the workpiece using a needle that allowed us to engrave the lines, a perpendicular tool that helped us to make straight and orthogonal lines and another tool which was a heavy base that provided a thick foundation and prevented any unwanted movement of the workpiece and the needle. Many precautions were required so that clean and accurate lines on the slate were formed because minor miscalculations can cause major complications later. Also, the perpendicular tool needed to be held tight and straight so that the line didn't move off. Then using all these tools and proper techniques we had to make all the dimensions on the square slate leaving a certain approximate area in the middle which was needed for future purposes. Then we cleaned our surroundings to make sure we left a tidy workplace behind.

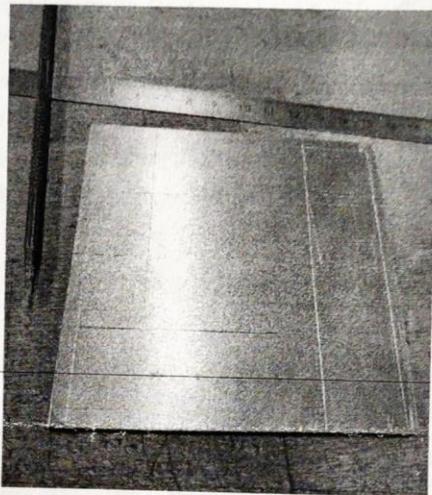


Figure 3: Scribing done using needle

Date and Name of Teacher 05.01.20 U.Kommer	Stamp and Signature Institute 
Date and Name of Advisor: 23.01.2020 L.Hüllenkremer	Stamp and Signature FH Aachen Campus Jülich Institut für Produktionstechnik nach Stichprobenkontrolle eine Karte



Freshman Institute

Weekly proof of internship at  
Freshman Institute

Name: Khosla	Given Name: Shreshth	Group: 1 g	Week: 06.01.20-10.01.20
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Internship: Mechanical workshop	Student ID-Number FH Aachen: 3256391	
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Type of work carried out: (in some headwords)

Monday

- Center punched the intersecting points of aluminium sheet
- Engraved names and date of birth on it
- Read about the topic of sawing

Tuesday

- Scribed the dimension on a steel plate
- Filed the sharp edges of the workpieces
- Made dimensions on the workpiece

Wednesday

- Learned about the topic of cutting metal pieces using shears
- Read about the topic of drilling, regarding how to use it

Thursday

- Started filing the excess dimension of steel workpiece and get 90 degree angle
- Scribed the block with all dimensions
- Engraving of desk number

Friday

- Started scribing a bottle opener from a rectangular steel sheet
- Learned about the functions of a drilling machine and how to handle it

Remarks:

All information given above is correct.

Date, Name, Stamp, Signature of Teacher:

16.01.2020 Utkanme



Date, Name, Stamp, Signature of Advisor:

23.01.2020 L. Hilleksemel C. Staubach

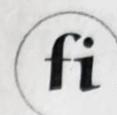
Name, Given Name: Khosla Shreshth

Student ID-Number of FH Aachen: 3256391

Report for the time period: 06.01.20 – 10.01.20

Internship: Mechanical Workshop

Group: 1g



Freshman Institute

On 6<sup>th</sup> January, we started our second week in the mechanical workshop by continuing the work that was mentioned in the previous workshop using the square slate on which we had to center punch the intersecting points with hammer and a needle. Then we had to write our names and date of birth by engraving them in the center of the square slate for which we left that space.

Afterwards the teacher told us to read the theory of sawing which involved cutting of hard metal pieces into required shapes and sizes. Further we were illustrated how to use the saw and how to cut at a particular angle. Later we were given the workpiece of aluminum and steel. The aluminium needed to be cut in vertical direction whereas the steel piece had to be cut horizontally from any side. At the end we were supposed to clean the workplace and the table.

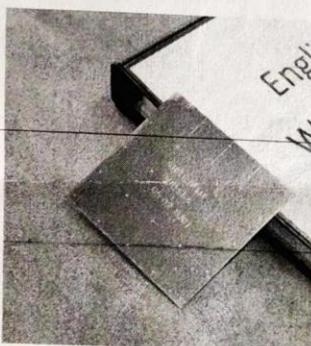


Figure 1: Square slate.

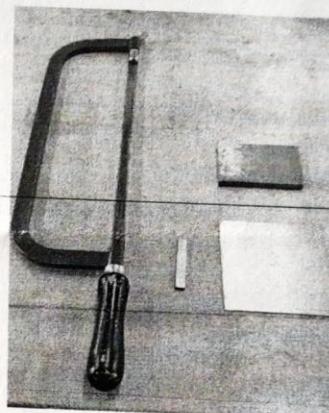


Figure 2: Saw with sawed metals

On the next day, the leftover work from the previous day was completed. After completion, another task was introduced to us and we were given a thin steel sheet. That task needed certain lines and points to be marked with high precision which we did using divider, scribing needle, scale and Vernier height gauge. After scribing and plotting points, we had to use a marker in order to make it clear what had to be removed and what portion of the workpiece needed to be bent. Later the workpiece was filed using a number 3 tool which smoothened the sharp edges of the piece. After working with that workpiece, we started a new project which was making a mini foosball table. For that, we were provided with 4 different workpieces that had to be cut into the shape of goalpost, whose dimensions were given. So we started with the process of scribing. Out of 4 pieces we had to make 2 sets with same dimensions. Then after putting lines of given dimensions, we began with filing the pieces.

On the next day, we were given a lesson on cutting the pieces using shears. There were 2 types of shears with different position of the blades and according to their blades they were given names "left" and "right". The left shear was used to cut pieces whose left part was unwanted and vice versa. Then we started cutting all the unwanted portion from all the workpieces. The cuttings needed to be precise so that later formation of project shouldn't have any obstruction. Later, we were told to read the topic of drilling from our 2<sup>nd</sup> book which consisted of working of the machine and the way of holding the machine. Also an important page was given regarding safety which involved that it is necessary to remove all the accessories from the body. Later, after reading this topic a heavy rectangle workpiece was given that needed to be started on the next day.

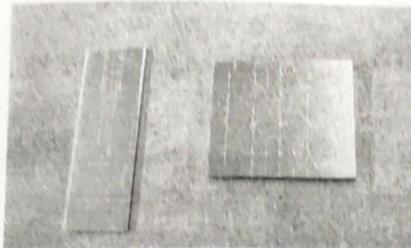
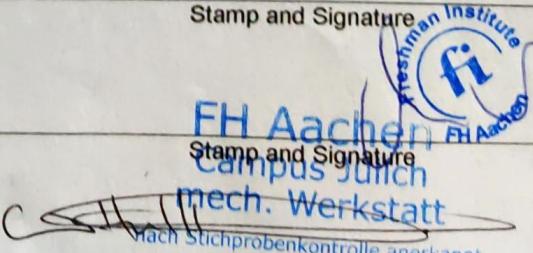


Figure 3: Bottle opener project and scribing  
on metal piece

The following day began with filing the workpiece that was provided to us in the previous session. Earlier, the dimensions of the piece were  $80 \times 81.2 \times 8$  that needed to be changed to  $80 \times (79.7-80.3) \times 8$ . The portion (79.7-80.3) indicates the range of an error that is acceptable according to the standards followed. There were many different ways of doing filing on that piece and it should be known how much pressure and force is required according to the situation. We even had to make the piece  $90^\circ$  from two unlevelled side as it was not when given earlier. The angle was checked using a right angle. The method of checking is by joining the smooth side to one of the longer sides of the right angle and let the rough side touch the other side of the right angle, if any light passes between rough side and the right angle, then it will not be considered as orthogonal. After doing this work, we had to do scribing of given dimensions using Vernier height gauge and center punched for drilling that would be done later. And then we engraved our seat number in the bottom right corner. Later, we were

given a new task in which a rectangle sheet was provided and had to make a guitar shaped bottle opener. All the dimensions on the sheet had to be made using Vernier height gauge and center punched for drilling.

On the final day of the week, we started with the scribings that were still undone. After giving basics dimensions to the workpiece we started making the shape of a guitar using a divider. Then we were again told to read the topic of drilling and the instructor explained the formula of revolution per minute (RPM) of drill. Later, the teacher demonstrated how to use the column drill and explained how to increase/decrease the speed according to the drill and whether it should move clockwise or anticlockwise and most important how to stop the machine in case of emergency.

Date and Name of Teacher	Stamp and Signature
16.01.2020 Utkummu	 FH Aachen Freshman Institute
Date and Name of Advisor: 23.01.2020 C. Hullenkemper	Stamp and Signature  FH Aachen Campus Jülich mech. Werkstatt Nach Stichprobenkontrolle anerkannt



Freshman Institute

# Weekly proof of internship at Freshman Institute

Name:  
KhoslaGiven Name:  
ShreshthGroup:  
1gWeek: 13.01.20-  
20.01.20Internship: Mechanical  
workshopStudent ID-Number FH Aachen:  
3256391Type of work carried out: (in some headwords)  
Monday

- Started with the process of drilling holes of different dimensions on the prepared steel workpiece

Tuesday

- Continued drilling on that workpiece
- Did countersinking on that workpiece after drilling

Wednesday

- Started drilling holes of different dimensions the bottle opener
- Countersinking done manually and using machine on bottle opener
- Started filing in the shape of guitar

Thursday

- Continued filing on bottle opener
- Started chiseling the drilled holes to make space
- Filed the chiseled area to make it smooth

Friday

- Did tapping on the workpiece that was drilled earlier

Remarks:

All information given above is correct.

Date, Name, Stamp, Signature of Teacher:

22.01.2020 UKommes



Date, Name, Stamp, Signature of Advisor:

Name, Given Name: Khosla Shreshth

Student ID-Number of FH Aachen: 3256391

Report for the time period: 13.01.20 – 17.01.20

Internship: Mechanical Workshop

Group: 1g



Freshman Institute

In the third week of our mechanical workshop, we continued to move further with our project of making a guitar-shaped bottle opener. Before that, we had to finish our work on another workpiece in which points were marked and the remaining job had to be done. We started with the process of drilling using a column drill machine which was widely used for making holes of small and large dimensions even larger than 13 mm. Many ways of using the drill were restrained to keep the life span of the drill long. For example, beating the workpiece with the drill continuously to check the overlapping of the center punched hole and the drill can cause the drill to get blunt which further will obstruct while drilling. Other safety measures like watching the speed of the spindle for using different needles had to be checked as it could have caused damage to the workpiece and caused the breakage of the drill. Usage of coolant was also very important as it cooled the heat that was produced by the friction.

After this, we started by placing our workpiece between the machine vice. The workpiece had to be properly fixed into the vice because if it was not placed properly it could come out while drilling which could have been injurious and would have caused damage to the drill too. After setting the piece into the vice, we clamped a 5 mm drill into the spindle and speed was calculated and set to the machine. Then according to the technical drawing, we had to make 4 holes of 5 mm diameter on our first row on the front side of the workpiece. Next, we started with drilling holes of 6.8 mm diameter, and in this case, too we had to change the speed of the spindle and set accordingly and again did 4 holes to the second row. Similarly, we did holes for the third row of dimensions 6.4 mm diameter and 10 mm diameter on the 2<sup>nd</sup> and 4<sup>th</sup> positions. The work was time-consuming because on a single machine 3 people were working. As we were out of time, we started cleaning with a special cleaning cloth and brush to remove the chips from the machine and suck the coolant back to the bottle. We did the last row on Tuesday, which had two dimensions 6.4 mm and 7 mm. There were 5 holes of 6.4 mm on the 1<sup>st</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and the last hole, whereas the 7mm dimensions were on 2<sup>nd</sup> and 6<sup>th</sup> position. Finally, we were finished with drilling the holes, now we had to do the countersinking. Countersinking is a process to remove the chips or burrs from the metal workpiece and for that purpose we use a 90° countersink. The approximate speed of the spindle should always be 350 revolutions per minute (RPM). The dimensions for countersinking were provided. For the first row, it was 6 mm on the 1<sup>st</sup>, 3<sup>rd</sup> and the 5<sup>th</sup> whole. On the second row, countersinking was done of 8 mm on the same positions of 2nd row. Then on the third row, the countersinking was done on the back of the workpiece for the 1<sup>st</sup> position and the 3<sup>rd</sup> and the 5<sup>th</sup> position, it was done from the front side. Then, for the last row, countersinking was only done on the 1st and the last hole. Thus, we completed our countersinking process for that workpiece.

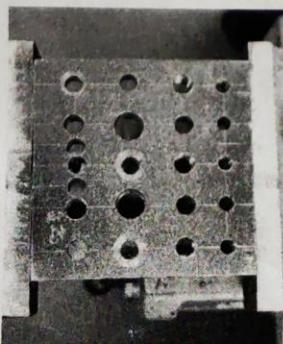


Figure 1: Drilled workpiece

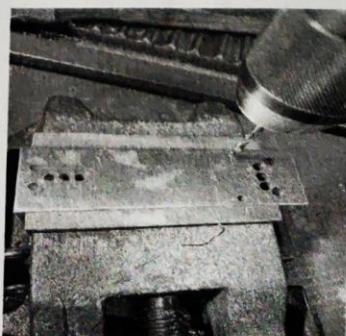


Figure 2: Drilling of bottle opener

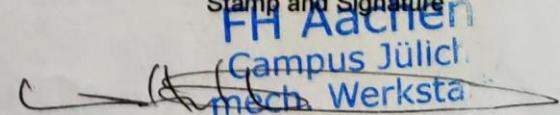
On the next day, we started drilling the bottle opener. The process of drilling was the same for the bottle opener and done for different dimensions. After drilling was completed, we did the countersinking on it manually and on the machine. Later, we had to cut the guitar shape from the rectangular sheet which we made on it. We started this by sawing the excess part from the sheet and then filing the remaining area to get the perfect guitar. Many different filers were provided for various shapes filing like a curved filer was given to make a v-shaped cutting.

On Thursday we continued with filing and gave the rectangular sheet a proper guitar shape. Then we had to do chiseling. It is a process of breaking the drilled structure to form space and to remove the unwanted part using a chisel and a hammer. The chisel and hammer are held at a particular angle to remove the chips out. It was done only for the lower holes that were drilled. Then again, we had to file that area and make it smooth and straight. Later it was checked by our instructor and sandpaper was given on which we had to rub the workpiece in one direction for making it smooth and finalizing the bottle opener project.

Then, on the last day of the week, the instructor told us to read the topic of tapping which involved the removal of material inside the hole so that a screw or a bolt can be threaded into it. After reading we had to do tapping of the previous workpiece in which the 1st and 2nd row was only required to be done. In the 1st row, only the holes that had been countersunk were to be tapped using three types of tap; first tap, second tap and bottoming tap of dimensions 6 mm diameter and for the 2nd row it was 8 mm diameter. After doing that, we were given tools to check the threading that was done. To finish off the week we cleaned the bench.



Figure 3: Bottle opener

Date and Name of Teacher	Stamp and Signature
22.01.2020 U.Kamm	 FH Aachen Campus Jülich mech. Werksta.
Date and Name of Advisor:	Stamp and Signature
30.01.2020 L.Hillenkamp	 nach Stichprobenkontrolle am 1. Januar 2020



Freshman Institute

Weekly proof of internship at  
Freshman Institute

Name: Khosla	Given Name: Shreshth	Group: 1g	Week: 20.01.20- 24.01.20		
Internship: Mechanical workshop	Student ID-Number FH Aachen: 3256391				
Type of work carried out: (in some headwords)					
Monday					
<ul style="list-style-type: none"><li>Started with new topic called external tapping</li><li>Read about the topic of turning using center lathe machines</li></ul>					
Tuesday					
Visit to Rhine-Waal University					
Wednesday					
<ul style="list-style-type: none"><li>Reduced the length of a steel workpiece using the center lathe machine</li></ul>					
Thursday					
<ul style="list-style-type: none"><li>Did scribing on the workpiece on two adjacent sides</li><li>Centerpunched the intersecting lines</li><li>Started to make the head of the players</li></ul>					
Friday					
<ul style="list-style-type: none"><li>Continued to make the upper body of the players from previous day</li></ul>					
Remarks:					
All information given above is correct.					
Date, Name, Stamp, Signature of Teacher:					
30.01.2020 U. Kammes					
Date, Name, Stamp, Signature of Advisor:					
27.02.2020 U. Kammes					
FH Aachen Campus Jülich Mech. Werkstatt					



Name, Given Name: Khosla Shreshth

Student ID-Number of FH Aachen: 3256391

Report for the time period: 20.01.20 – 24.01.20

Internship: Mechanical Workshop

Group: 1g



Freshman Institute

The fourth week of our mechanical workshop began with the new topic of tapping. Tapping is a process of making threads on a cylindrical metal structure to form a screw or a bolt. First, we were asked to read the topic of that process and then we started with external tapping on a piece of 8 mm dimension in diameter. Before that, we had started filing one end of the cylinder at an angle of 45° using a small filer of size 1 and then made the other side curved of dimension 2.5 mm. Tapping was done using an instrument called die holder. We were given die holder of size M8 of pitch 0.5 mm. While tapping it was necessary to keep checking the level of the tapper concerning the workpiece that should always be perpendicular to it. While doing tapping we had to use an oil to lower the effect of the friction. After doing tapping, we were illustrated how to use the center lathe machine but first, it was important to know about the machine theoretically and know the names of different parts of the machine that were to be used.

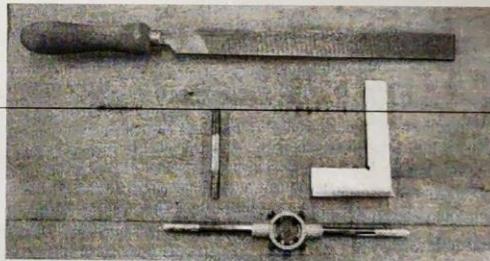


Figure 1: External tapping

On Wednesday, we were given 6 workpieces of the cuboidal shape of dimension 43.5 mm approximately to make the players of the foosball table using the center lathe machine and two people were working on each machine. Six other fully designed players were provided which were used for other teams. We were then told to file the pieces to some level so that they could be clamped easily inside the jaws of the machine. Before using the machine, it was necessary to oil the machine properly to make the movement smooth. Then we had to make the dimension to 42 mm with an error of  $\pm 0.2$  mm. Such errors are defined as standard measurements. Next, we fixed the piece into the jaws and set the height of the knife that was also mentioned on the machine. Every machine had its knife height. After setting the height, we were told which knife was needed for vertical (depth setting motion) and horizontal (feed motion) cutting. In this case, we had to use the 90° knife for vertical cutting. The speed of the machine had to be set according to the size of the workpiece and the type of cutting we were doing. Then later, the workpieces were filed to 42 mm.

On Thursday we continued to file the pieces that were left on the previous day. After making the dimension 42 mm we had to scribe dimension on that workpiece on two of its adjacent sides. Further, we had to centerpunch and then drill the pieces according to the given dimensions in the workbook. After completing this step, we formed the basic structure of the player. The calculations had to be done in order to find the no. of turns we had to give to the top slider and cross slider after finding a zero point. The basic diameter of the workpiece was 20 mm which had to be shaved off in 2 steps. Firstly, it needed to be cut to 14.2 mm approximately and then after achieving this diameter we again needed to shave it to 12 mm. The reason for doing it twice was to avoid any

errors. The top sliders needed to be moved slowly so that the final product comes out smooth and not rough. After that, making the workpiece 12 mm in diameter, giving the shape of the head had also to be done simultaneously. The process of shaping the head starts by changing the knife and putting hexagonal knife. Next, we had to go 5 mm in vertical direction from the corner of 12 mm diameter and then bring the knife back to the initial position and then move the knife 10 mm inside horizontally and again going 5 mm vertically in.

On the last day, we continued to make the head of the players, several mistakes were made during this process. Mistakes like, not changing the knife or speed of the machine and turning the top slider or cross slider more or less than required. The instructor illustrated once again how to do it properly and even explained the importance of changing the speed of the machine and told us why it was necessary to change the knife for a different movement. Unfortunately, we had to make 3 new pieces again because of our mistakes. This process was time-consuming as it required many changes that needed to be performed. Then we cleaned the bench and left the workplace.

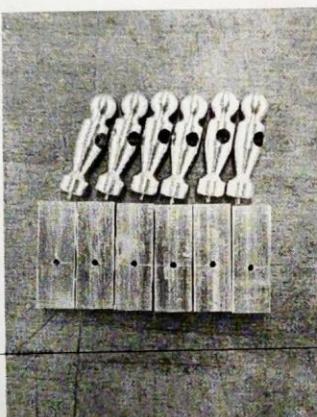


Figure 2: Players and cuboidal workpieces

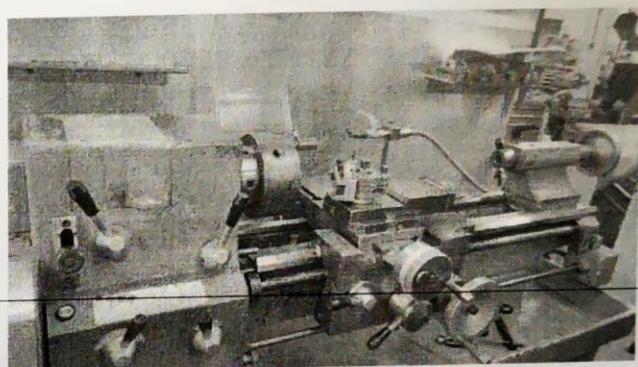


Figure 3: Center lathe machine

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30.01.2020 U.Kummel	 FH Aachen Campus Jülich Institut für Mechanische Werkstatt nach Stichprobenkontrolle anerkannt
Date and Name of Advisor:	



Freshman Institute

# Weekly proof of internship at Freshman Institute

Name: Khosla	Given Name: Shreshth	Group: 1g	Week: 27.01.2020- 31.01.2020
Internship: Mechanical Workshop	Student ID-Number FH Aachen: 3256391		
Type of work carried out: (in some headwords)			
Monday			

- Cutting the rear side of the workpiece to 12 mm as base diameter
- Learning about turning

## Tuesday

- Made legs of the foosball players
- Drilled the metal plates that were used to make the goalpost
- Learned about bending the metal plates

## Wednesday

- Bent metal plates
- Scribed the aluminium longer pieces
- Drilled the pieces

## Thursday

- Countersinking the aluminium plates
- Tapping using M3 tapper.

## Friday

- Scribing, center punching and drilling on aluminium plates
- Sawing and filing of the metal plates

### Remarks:

All information given above is correct.

Date, Name, Stamp, Signature of Teacher:

06.02.2020 U.Kommer

Date, Name, Stamp, Signature of Advisor:

27.02.2020

L.Hiltenkemeier L.Schmeck



FH Aachen  
Campus Jülich  
mech. Werkstatt

nach Stichprobenkontrolle anerkannt

Name, Given Name: Khosla Shreshth

Student ID-Number of FH Aachen: 3256391

Report for the time period: 27.01.20 – 31.01.20

Internship: Mechanical Workshop

Group: 1g



Freshman Institute

On the first day of our fifth week in the mechanical workshop, we completed our previous week's task of making the heads of the foosball players. For the center lathe machine, we had to take the precaution of oiling the machine parts. The height of the machine was set again. Continuing the steps told by the instructor, we completed our work. The next step was to make the left-over side of the workpiece 12 mm in diameter by the same process as we did earlier but we had a shortage of time so that task was shifted to the next day.

On the next day of our internship, we started lubricating the machines. After that, we began to make the rear side of the workpiece 12 mm. First, the workpiece was clamped into the 4 jaws in such a way that the drilled hole should come in between any two adjacent jaws. This had to be done properly as not doing it in this way could have ruined the piece. After making the whole workpiece of a base diameter of 12 mm. Now we were told to make the feet of the players using another knife and accordingly a different speed of the machine was set. As illustrated, the feet of the players were to be formed 9 mm horizontally from the back of the workpiece and 5 mm vertically. We started to form the feet, the different knife was used for higher precision and accuracy. The speed was asked to be 800 RPM. The top slider was fixed so that only the inward movement could take place. The reason was that the workpiece's length exposed to the outer part of the jaws was measured and fixed. The

cross slider required slow-motion movement to prevent wavy patterns on the final product formed. After forming the feet of the players, we were illustrated how to bend the workpieces that we made earlier (goal post and ball catcher).

On the following day, we were also given two long aluminium sheets for the basic framework of the foosball table. But before working on the sheets we had to complete the task of bending the workpieces that were formed. The bending process had to be done with precision and by taking some precautions. A heavy metallic block was used and a soft hammer to bend the material. The metallic block was used to provide a surface on which the bent shape would rest. A mat was kept on that portion of the floor where we had to bend so if the block fell, it did not procure any dents. The steps were illustrated about which side and what portion had to be done. After doing the bending process, the instructor explained the technical drawing of the aluminium sheet. We began with scribing on the aluminium sheets of given dimensions. The remaining work was to be continued on the next day.



Figure 1: Feet of the players



Figure 2: Bending of metal pieces

On the next day, we started with making center punches on the aluminium after make the scribing lines. After center punching, we had to make 4 holes using 2.5 mm drill and 15 mm vertically in the 2 opposite sides of smaller length. Then on one of the sides of the aluminum sheet we had to make holes of 6.1 mm and a 12 mm hole in the center but vertically lower than the rest of the holes. During drilling, we had to take care of the safety measures and remove all the accessories from the body.

On the next day, we completed the drilling and countersunk the holes to get the chips out. Next, we started threading the 2.5 mm holes using a M3. While doing this process we had to do the oiling time to time as the M3 needle was itself not too hard. If not used properly it would break easily. Then we cleaned the workbench and the floor.

On the 31st of January, we were given the other two aluminium sheet to complete the frame of the foosball table. These two sheets were for the side where goalposts had to be attached. The length of both the sheets was needed to be checked. After this, we again had to do the scribing of given dimensions. The accuracy of making lines had to be very high. Then we had to measure the width of the goalposts. Each goalpost had different measurements because of small errors that occurred during cutting and bending the sheets, and according to this width we had to do scribing. After scribing we had to centerpunch and then drill the points. Further, we sawed the portion where goalpost had to be fixed.

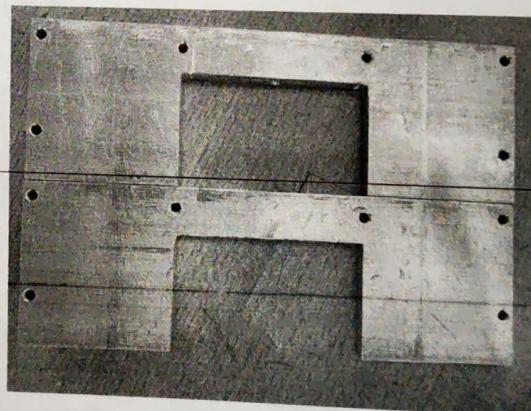


Figure 3: Drilled and sawed aluminium sheet

Date and Name of Teacher  06.02.2020 U.Kommer	Stamp and Signature  
Date and Name of Advisor:  27.02.2020 L.Hilkenkremes	Stamp and Signature  HTWK Aachen Campus Jülich mech. Werkstatt nach Stichprobenkontrolle anerkannt



Freshman Institute

# Weekly proof of internship at Freshman Institute

Name: Khosla	Given Name: Shreshth	Group: 1g	Week: 03.02.20 - 07.02.20
Internship: Mechanical Workshop		Student ID-Number FH Aachen: 3256391	
Type of work carried out: (in some headwords)			
Monday			
<ul style="list-style-type: none"><li>Sawed and filled the aluminum pieces</li><li>Centerpunched and drilled the point for the goal and the post</li></ul>			
Tuesday			
<ul style="list-style-type: none"><li>Tapped the drilled point</li><li>Drilled the feet of the table</li><li>Assembled the parts using allen key</li></ul>			
Wednesday			
<ul style="list-style-type: none"><li>Made the table stable</li><li>Started working on scoreboard</li></ul>			
Thursday			
<ul style="list-style-type: none"><li>Scribed the scoreboard pieces</li><li>Drilled and filled the pieces</li></ul>			
Friday			
<ul style="list-style-type: none"><li>Cut two wires for scoreboard</li><li>Cut six pieces from a plastic tube that would work as stoppers</li></ul>			
Remarks:			
All information given above is correct.			
Date, Name, Stamp, Signature of Teacher: <i>01.04.2022 F. Krichel</i> <i>i. U. Frank C. Krichel</i>			
Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. 1 D-52428 Jülich Germany			
Date, Name, Stamp, Signature of Advisor: <i>04.04.2022 F. Krichel</i> <i>i. U. Frank C. Krichel</i>			
Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. 1 D-52428 Jülich Germany			

Name, Given Name: Khosla Shreshth	
Student ID-Number of FH Aachen: 3256391	
Report for the time period: 03.02.20 – 07.02.20	
Internship: Mechanical Workshop	
Group: 1g	 Freshman Institute

On the 3rd of February, we continued with the leftover sawing of the aluminum pieces. After sawing, we hammered the unnecessary part down for the goal post to fit in properly. As there were some inaccuracies with the measurements, it was important to file the inner boundaries of the metal piece for a perfect fit with the goal post. After finishing the metal pieces, we started working on the connecting point of the goal and post. We scribed 75mm from the vertical base, centerpunched that single point, and finally drilled it with a 2.5 mm diameter.

On the next day, I started working on the drilled piece. We were required to do tapping of the hole with M3. Later, we started working with the feet of the foosball table. We scribed the pieces according to the dimensions provided to us, then we counterpunched these points and drilled them with 2.5mm diameter. After finalizing all the pieces, we were given an Allen key to screw and assemble the parts.

On the following day, I started filling the feet of the foosball table because it was wobbling due to inaccuracies. It was time-taking as I had to consult the instructor about the amount of filing that was supposed to be done. Even after that, there were still some inaccuracies and wobbling, so the instructor suggested I loosen up the screws of the base. The tension in the screws was also making the table bendy. After that, we were provided with six metal sticks onto which the foosball players were going to be attached. Later, we were given a long metal stick out of which we had to cut four pieces of 13 mm in length for our scoreboard using an end cutting plier. We scribed the pieces according to the technical drawing. The wires were small and complicated, we had to drill from two sides, one side that was towards the goal post and the other that was holding the score nut stick.

On the 6th of February, I started scribing the four pieces. On the goal post side, we had to mark the middle point and centerpunch that point. On the other side, score nut stick, we had to make 8 mm from the vertical base and 3 mm from the horizontal and similarly centerpunched that point. We did this process for all four pieces. Then, we drilled these points. I started with the score stick side, using a 3 mm diameter drill with 3 mm depth, then I did the other side using a 2.5 mm drill with 6 mm depth. After drilling and cleaning the machine, the next task was to do was tapping the holes with a diameter of 2.5 mm. Then we filed the pieces till they had a radius of 3 mm.

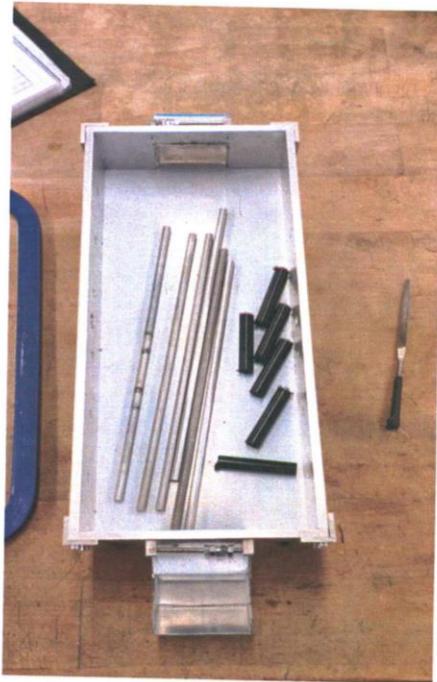


Fig.1 Foosball table with stopper

On the last day of the week, the instructor provided us with a long metal wire out of which we had to cut two pieces that we used for the scoreboard nuts. Then, we scribed points on the metal sticks where the players were supposed to be attached. Later, we had to cut six pieces, length of 50 mm each, from a long plastic tube that would work as a stopper for those metal sticks. Using the lathe machine, we had to cut 0.5 mm from the plastic pieces to make the surface smooth. Also, we had to make a 45-degree angle cut of length 1 mm on the smooth surface. The instructor explained the process of drilling using a lathe machine.

Date and Name of Teacher	<i>i.V. Freshman Institute</i> Stamp and Signature Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. D-52428 Jülich Germany
Date and Name of Advisor:	<i>i.V. Freshman Institute</i> Stamp and Signature Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. D-52428 Jülich Germany



Freshman Institute

# Weekly proof of internship at Freshman Institute

Name: Khosla

Given Name:  
Shreshth

Group: 1g

Week:  
10.02.20 - 14.02.20Internship: Mechanical  
WorkshopStudent ID-Number FH Aachen:  
3256391

Type of work carried out: (in some headwords)

Monday

- Drilled the plastic holders

Tuesday

- Made the aluminum stoppers for the goalie

Wednesday

- Finalized the plastic holders
- Snucked the holders into the metal sticks

Thursday

- Learned about the milling machine
- Made the feet of the players flat

Friday

- Painted the teams with different color combination
- Assembeld and finalized the foosball table

Remarks:

All information given above is correct.

Date, Name, Stamp, Signature of Teacher:

04.04.2022 F. Krichel



Freshman Institute

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Date, Name, Stamp, Signature of Advisor:

04.04.2022 F. Krichel

Freshman Institute  
Aachen University of Applied Sciences  
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Name, Given Name: Khosla Shreshth	
Student ID-Number of FH Aachen: 3256391	
Report for the time period: 10.02.20 – 14.02.20	
Internship: Mechanical Workshop	
Group: 1g	 Freshman Institute

On the 10th of February, we continued with the drilling of the plastic holders for the foosball table. Firstly, we fixed the plastic holder into the chuck, then we set the speed of the lathe machine accordingly. Before starting the machine, we had to find the touching points of the plastic from the bottom and the side and use it as a zero point. After this, we drilled 30 mm into the plastic holder by using the top slider lathe machine. This process was time-taking as we were working in pairs.



Figure.1 Lathe machine

On the next day, we continued drilling the plastic holders and followed the same procedure. After doing it six times we were done with the holders. Later, we had to make two pieces that would stop the movement of the goalies after the range of the goal post. For the same, we put the aluminum piece inside the chuck and fixed it, and drilled 13 mm with the lathe machine. Next, we had to find the touching points with the blade on the top slider, from the bottom and the side of the piece. Then we went to the bottom of the player and went to the left side of the chuck and repeated the process one more time.

On the 12th of February, we started to finalize the holders and gave them the final length of 50 mm using the lathe machine. We fixed the plastic into the chuck and set the speed accordingly. We tried fitting the plastic holders into the metal sticks but the plastic was too tight to go in. We had to use a cutter/Filer to adjust the fitting. Later we were able to fit the holders into the sticks. The instructor explained the usage of the milling machine and the safety rules.

On the following day, I started working with the milling machine that was used for shaping the feet of the players and making them flat. It was time taking process as we had to be very cautious and patient while working with that machine. After completing, we were done for the day.

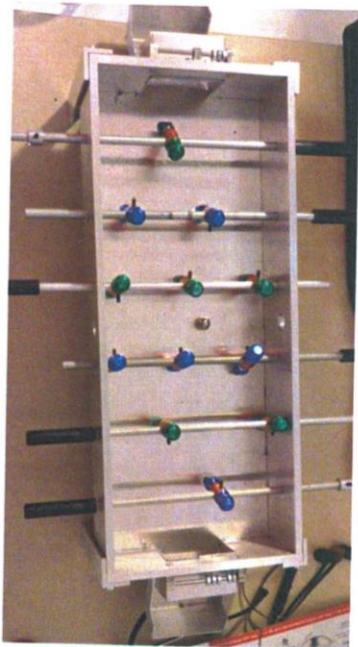


Figure.2 foosball table

On the 14th of February, we had to submit our new project or finish the foosball table. As the technical drawing for my new project was not ready, I started finalizing the table, I colored the teams with two different color combinations and then I fixed all the players into the metal wires and used stoppers so that the players won't move on the wire while playing. Two aluminum stoppers were used on the sticks on which the goalkeepers were fixed. Finally, a ball was kept on the table and the movement of the players was checked.

Date and Name of Teacher  06.04.2022 F. Krichel	 Freshman Institute Stamp and Signature i.v.  Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. D-52428 Jülich Germany
Date and Name of Advisor:  06.04.2022 F. Krichel	 Freshman Institute Stamp and Signature i.v.  Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. 1 D-52428 Jülich Germany



Freshman Institute

# Weekly proof of internship at Freshman Institute

Name: Khosla	Given Name: Shreshth	Group: 1g	Week: 17.02.20 - 21.02.20
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Internship: Mechanical Workshop	Student ID-Number FH Aachen: 3256391	
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Type of work carried out: (in some headwords)  
Monday

- Made the technical drawing of the new project

## Tuesday

- Finalized the material for the project
- Scribed the details onto the brass material

## Wednesday

- Drilled the area between the swords and the arc
- Sawed the unwanted boundary

## Thursday

- Drilled the small areas that were left

## Friday

- Filled the outer piece to make it smoother
- Used a filer machine to make the inner portion smoother

## Remarks:

All information given above is correct.

Date, Name, Stamp, Signature of Teacher:

04.04.2022 F. Krichel

i.V.   
freshman Institute  
Aachen University of Applied Sciences  
Campus Jülich Heinrich-Mußmann-Str.  
D-52428 Jülich Germany

Date, Name, Stamp, Signature of Advisor:

04.04.2022 F. Krichel

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In addition add a detailed report of about two pages per week!

Name, Given Name: Khosla Shreshth	
Student ID-Number of FH Aachen: 3256391	
Report for the time period: 17.02.20 – 21.02.20	
Internship: Mechanical Workshop	
Group: 1g	 Freshman Institute

On the 17th of February, we had to finalize the foosball table and submit it. I did it on the 14th of February only. I started working on my new project, a Sikh logo, called "Khanda". The Khanda symbol depicts the Sikh doctrine Deg Tegh Fateh in emblematic form. It is also part of the design of the Sikh national flag, the Nishan Sahib. I did this project with one of my colleagues. We started working on the technical drawing of the khanda. The symbol consisted of a double-edged sword, two single-edged swords, and a circle in between and had a lot of details. Due to this, we constantly had to ask the instructor to help us with the drawing and the measurements.

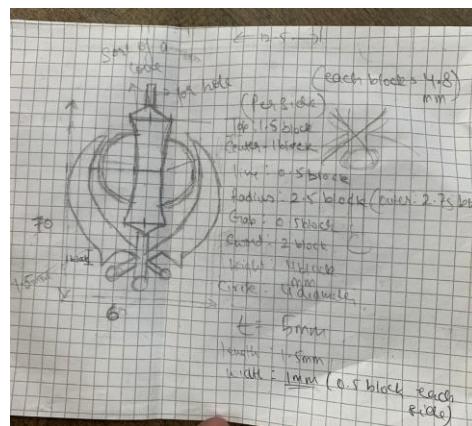


Figure.1 technical drawing

On the next day, we started by thinking about the kind of material we could use, and with the help of our instructor, we finalized it to be brass. Then we started with scribing the drawing on the brass plate. The arcs and small circles while scribing took the most time. After completing the scribing, we did the centerpunching.

On the following day, we drilled the centerpunched points with an appropriately sized drill as we just had to remove the excess parts between the double-edged sword and the arc. After drilling, we hammered the waste area much more precisely so that we didn't damage the neighboring parts. Then, we filled that portion very slowly for the same reason and made it smoother. We then moved to the part between the single-edged sword and the arc and centerpunched the area for drilling. We used small drills this time as the portion was very tight. We started sawing the unwanted boundary but couldn't complete it because of lack of time.



Figure 2. drilled portion



Figure 3. filled and drilled

On the 20th of February, we completed the sawing and filling part of the outer boundary. We started drilling the small areas that were left and did that with the help of our instructor. After drilling, we finally moved to fill the entire piece.

On the last day, we continued filling to make the outer swords smoother and the space between the inner sword and arc smoother. Later towards the end of the day, our instructor gave us an important tool and explained how to use it properly. The instructor told me that the machine was strong and could easily file with very little force. It was a small battery-driven filler which was great to make the surfaces extremely smooth.



Figure. 4 Khanda

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Date and Name of Advisor:	 Freshman Institute Stamp and Signature Aachen University of Applied Sciences Campus Jülich Heinrich-Mußmann-Str. 1 D-52428 Jülich Germany
04.04.2022 F.Krichel	i.V. Chanchal Verma