



الجامعة
UNIVERSITI
TEKNOLOGI
MARA

Cawangan Johor
Kampus Pasir Gudang



INDUSTRIAL TRAINING REPORT

Name : Muhammad Nur Fahmi Bin Osman
Programme : EH110 – Diploma in Chemical Engineering
ID Number : 2018218196
LI Duration : 17 Weeks (22 March 2021 – 15 July 2021)

Supervisor : Mr. Tay Lai Heng
Company : PLO 77, Jalan Cyber 5, Senai Industrial Estate Phase
Address III, 81400 Senai, Johor

ACKNOWLEDGEMENTS

In the name of Allah the Most Gracious and Most Merciful, all praise to Him and His Messenger Muhammad S.A.W. for giving me healthiness, life, and also a strong mind to be able to complete my industrial training successfully at Macro Chemicals SDN.BHD.

First and foremost, I would like to thank everyone who had been contributed to the successful completion of my industrial training for about 17 weeks which is from 22 MAC 2021 until 15 JULY 2021. I would like to dedicate special appreciation to my industrial supervisor, Mr. Tay Lai Heng as he always gives me invaluable advice, guidance, and limitless patience throughout this period of training. My acknowledgment also goes to my university supervisor, Tuan Mohd Haikal Mustafa, and to all my officemates that gave me a lot of support and invaluable advice. A lot of thanks to my beloved parents and family as they are always there for me besides giving me moral support yet they help me out throughout my industrial training.

May Allah blesses them for their valuable contributions and support throughout the successful completion of my industrial training and I am truly and sincerely enjoyed this internship period.

ABSTRACT

Industrial training is an important subject to be taken as this subject helps the student to learn and get used to the working environment. Other than that, this subject also helps the student to apply and use the knowledge that has been learned and taught to them. Industrial training also gives them new knowledge, a new skill, and new experience working in the industry. The objective of this report is to obtain the current progress of industrial training which will be discussing the training and experiences that we gained during industrial training at the company started on 23rd March 2021 and ended on 15th July 2021. The duration of training is 17 weeks, during this timeline I learn a lot of new things and get to know new people, and make new friends. I have been ordered to work from home from 7 Jun 2021 until 14 Jun 2021 due to a lockdown that is being ordered by the government. As we know, industrial training is a credited course program and it is compulsory to fulfill diploma coursework requirements for graduation for all UiTM students. I have been undergone my training period at Macro Chemicals Sdn Bhd, Johor. UiTM requires that all students need this report writing to document all the activities we went through during the training period. The main purpose of having this final report for industrial training students is to record all the relevant activities that we did and contribute to developing students' skills and capabilities. In addition, self-confidence, communication skills, and industrial problem-solving skills are gained and polished when performing any tasks given.

Table of Content

No	Title	Page
1.0	Introduction	1
2.0	Company Background	
2.1	Company History	2-3
2.1.1	Organization Chart	4
2.1.2	Company Milestones	5
2.2	Production Process Flow	6
2.3	Brief Weekly Activity as an Internship Student	7-8
2.4	Description of Task Assigned	9-11
2.4.1	Daily Activities	12-13
3.0	Conclusion and Recommendation	
3.1	Challenges and Solutions	14
3.2	Knowledge and Skills	14
3.3	Suggestions	15
3.4	Conclusion	16

CHAPTER 1

INTRODUCTION

CHE 353 is a compulsory subject that every semester 6 students must take in order to fulfill their diploma studies. This subject holds a credit unit of 7 which is high. This shows that this subject is really important and ensures that what has been taught before this from semester 1 until now will be used in the real-life working industry. This subject main objective is to let the students experience working life and works in real industry. Due to this pandemic, I faced a lot of difficulties and obstacles for example when I tried to apply for an internship. A lot of companies do not take intern students due to the pandemic as most of them are affected in terms of finances. Therefore, I had to go through research and try to apply to other companies that were far from my house. I have tried almost 30 companies and sent my resume to them. Luck hits me when I got an email that I got a placement to do my internship at Macro Chemicals Sdn Bhd. I was really happy as I got my chance to experience how the real industry works and also this company is just 30 minutes away from my house. It is convenient as I can drive there by myself. The duration of my industrial training is 17 weeks which is from 22 March 2021 until 15 July 2021. Unfortunately, I had to work from home for almost 2 months from 30 May 2021 until 15 July 2021 as the number of cases is very high which my supervisor had to let me work from home. My supervisor's name is Mr. Tay Lai Heng. He is very responsible and very kind to me. He also gives me a lot of advice and helps throughout my industrial training. Aside from that, the staff there is also very helpful and nice as well. I got into the department of sales and operation but more to operation as I always get into the production process. It was awesome and the best memories ever as I got to do a lot of activities and work with others in Macro Chemicals Sdn Bhd. The best part of all is that this company is handling chemical substances. I was really happy as I get to know more about chemicals and learn about them throughout my industrial training.

CHAPTER 2

Company Background

2.1 Company History

Macro Chemical Sdn Bhd (MCSB) is established on 27 March 1997. MCSB is responsible and has a role and function as engaging in manufacturing of household and personal care products. Figures 1 shows the front look of Macro Chemical Sdn Bhd.



Figure 1. Picture of Macro Chemicals Sdn Bhd.

Macro Chemicals Sdn Bhd is located near to my house which is located at PLO 77, Jalan Cyber 5, Senai Industrial Estate Phase III, 81400 Senai, Johor. Figure 2 shows the location of Macro Chemicals Sdn Bhd in the map.



Figure 2 Macro Chemicals Sdn Bhd location.

Every MCSB staff's main objective is to provide quality services that meet the needs of every customer. Each MCSB staff is dedicated to achieving the following main goals. MCSB will offer priority to meet needs and exceed customer expectations. Customer satisfaction is a part of the Key Performance Indicator (KPI). MCSB should provide reliable, efficient, and affordable services. This company will also always care about their customers and also committed customer reviews by always improving their efforts to fulfill their customer satisfaction and carries out the products according to their preferences. As a business organization, MCSB will ensure that their production and operations are successfully being done at optimum condition while producing reasonable financial returns. MCSB always ensures to keep improving in line with technological developments in all areas of MCSB meanwhile minimizing costs, decreasing losses, and impacts from daily operations. MCSB will always produce and tested the product according to meet customer needs. A lot of tests are being done and record as well. MCSB also makes sure its products are high quality and safe to use. The products are produced according to legislation in line with customer needs, community health, and ecological system. MCSB aims to fully achieve the Quality Assurance Programme.

2.1.1 Organization Chart

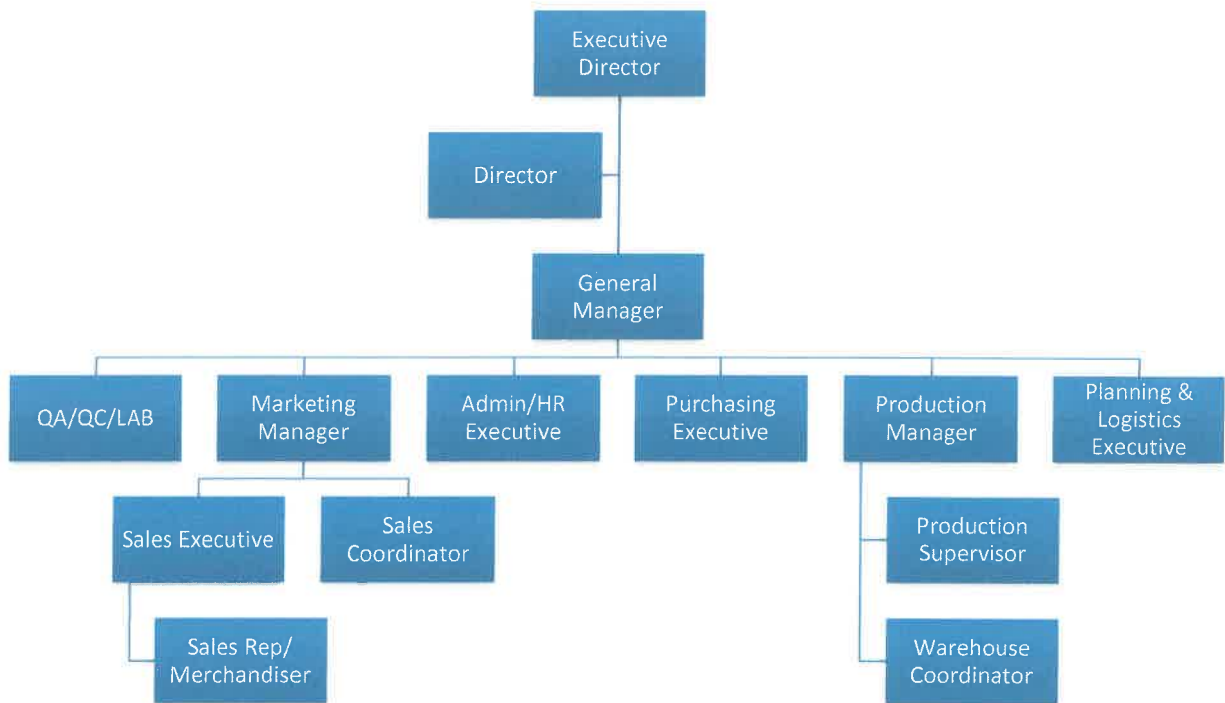


Figure 3 Company Organization Chart

2.1.2 Company Milestone



Figure 4 Company Milestone

2.2 Production Process Flow Chart

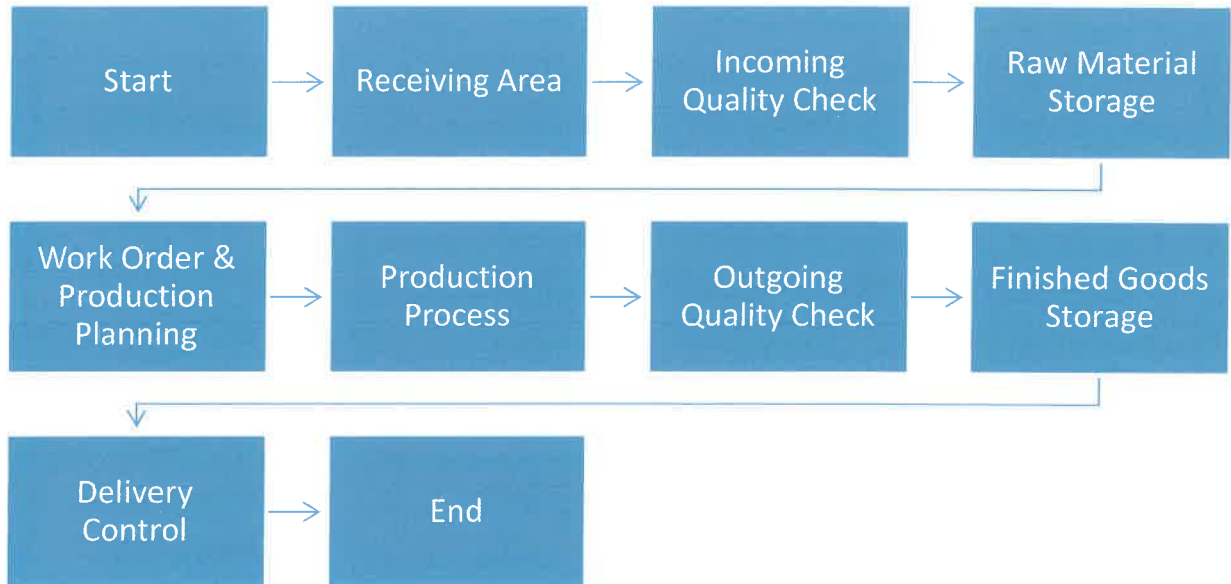


Figure 5 Process Flow of Company

All start from arrival of raw material that being ordered by the company. First of all, the raw material will be received at the specific area which there will be incoming quality check. Quality check is very important to ensure that the condition and quality of the raw material is in a good condition. If the raw material is in good condition, they will be stored in the raw material storage. Work order and production planning will be done as the company get ordered from the customers. Production process will be on the way which include mixing, storage, filling, coding and packing. Outgoing quality check is be done every one hour from throughout the production process. This is to ensure that the product being made is in good quality and meet the customer requirement. After that, the finished good is being stored and ready for transport to premises and for sell.

2.3 Brief Weekly Activity as an Internship Student

No. Week	Description
Week 1	In week 1, it was like an ice-breaking session as I get to know the staff and also the operators. Aside from that, I will be able to learn a few chemical substances that they used. I also get to learn and get my hands on material safety data sheets. I learn the making process of floor cleaner and also be able to study how a laundry machine works.
Week 2	In week 2, I learn a lot for example I learn the process of making laundry detergent and also the steps to start a laundry machine. Other than that, I will be able to do research on some chemical substances that are being used in the process for instance caustic soda and also hydroxypropyl methylcellulose. Lastly, sometimes I help in filling and packing part and do some ph test of the product samples
Week 3	In week 3, what I have done in the past few weeks have become a routine as I will do research on some chemical substances and also get to know the history of the company. I also do a ph test on the product samples and be able to experience how to make a dishwashing liquid in a mixer tank.
Week 4	In week 4, I did pretty much the same as last week, for example, do a pH test on the samples and study the chemicals that available in the lab. Besides that, I be able to learn how to do a working instruction on the machine. Lastly, I have to widen my study and focus on the flow and steps to start machine as it is important to do the working instruction.
Week 5	In week 5, everything is almost the same as the previous week but the difference is that I study and my focus is on making a product called smart bleach. I learn how to make them and what ingredients are needed to make them. I also help in the filling and packing process as some of the items are in high demand where I will pack them into boxes.
Week 6	In week 6, I did pH test on the product samples and also learn more about the filling machine by studying and do more research. I also helped in packing some products into boxes. I be able to experience how to make a floor cleaner.

Week 7	In week 7, I start my first day in this week by doing a research about glycerine as this is one of the chemicals substance that being used most of the time. I also helped in stickering up some bottles. Lastly, I packed some dish wash bottles into boxes.
Week 8	In this week, I studied the common problems of automatic bottle filling machine and helps in packing up some products. I learned on how to properly disposed chemical waste as my company is used chemical substances. Lastly, I helped in sticker up some bottles.
Week 9	In this week, most of my time spend in packing department. This is when I helped packing some glass cleaner bottles and do research on how to increase the efficiency of a mixer tank. Aside from that, I did pH test on the product samples. In this week also I do final check on my working instruction through the production manager, Mr Ong Boon San.
Week 10	Out of 5 days working, I only work for a day and for another 4 days, my supervisor ask me to work from home as the number cases is too dangerous for me to come for work. As for one day, I helped in packing some detergents by sealing the packaging and also do research on chemical called monoethanolamine (MEA).
Week 11	I was working from home as I patiently waiting for any email and Whatsapp if there is any kind of work that I able to do or help. I also ask my supervisor anything for example ask for any kind or work that he able to give. At the same time, I am working on the working instruction for other machines as there are several machines that available at the company.
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	
Week 17	

2.4 Description of task assigned

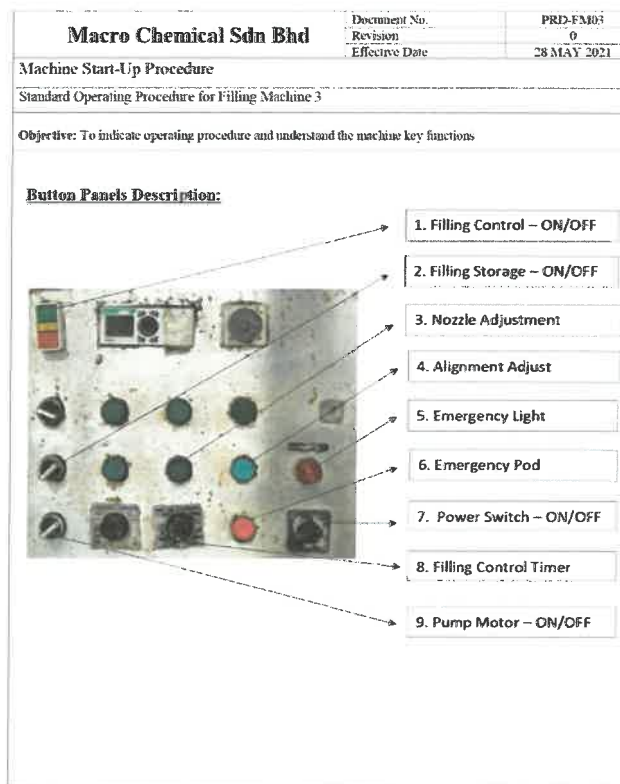
2.4.1 Standard Operating Procedure

This is mini project that I have contributed into which is making a proper working instructions for machines that is available in the company. Standard Operating Procedure is a procedure which is a set of step-by-step instructions that being compiled by the organization to help the workers operates and running the machine safely. A Standard Operating Procedure is really an important document that shows complete and proper instructions how to operate a machine and perform a particular business activity, such as manufacturing or record keeping. Images or videos can be included into the SOPs which is helps the workers to understand better and clarify the instructions. The SOPs is really important when comes to new worker who going to run the machine as the SOPs really helps the worker the proper step to operate the machine safely without cause any damage. Not only the operators need to know the proper SOPs but everyone needs to know who work in the organization. The SOPs can be checked every time as it being stick on the machine as it will be much easier to check and look up. The purpose of SOPs is to provide detailed instructions on how to carry out a task safely and efficient so that any team member can carry out the task correctly every time. SOPs are getting changed by time which need to be updated. SOPs is being documented once new machine come in. Every machine has their own SOPs.

Every business should prioritize employee safety as it is important which we dealing with human's life. With SOPS, there is no need to worry about any damage that could do to a business, customers, or employees as well. Accidents or damage could be prevented by following all the SOPs that being made. It is proven when they are following SOPs, works can be done efficiently and safely. SOPS very important to be wrote in simplest form that can be understand easily. Despite all of that, there are many benefits can be gained by the business if SOPs being provided. Some of the benefits are keeping the workers and customers safe and also can protect a business from legal liability claims. In addition, SOPs also can help motivate and increase the efficiency of a business.

There are so many impacts and consequences if SOP is not being followed, one of the foremost is to increase the risk of injuries and death. The existence of SOP could impact the quality of life as well. Other than that, it also can cause a lot of damage to a business's productivity, finances, and also reputation which we all know that all of these impacts are very difficult to recover. Failed to provide proper sop signal the government regulators that the business is not serious about

compliance. Figure 5 shows an example of working instructions of a machine. In the working instructions which consists of three pages which can be seen in the figure below. First page I conclude all the functions of all the buttons that have on the button panels. One of the problems that I faced is that the button is broken and no one knew what its functions for. Next page, I start list out the steps how to properly start run the machine safely from start until the end. In the conclusion, this mini project really opens my eyes to how importance it is the safety operating procedure as it related to human's life.




Macro Chemical Sdn Bhd	Document No.	PRD-FM03
	Revision	0
	Effective Date	28 MAY 2021

Machine Start-Up Procedure


Standard Operating Procedure for Filling Machine 3

Objective: To indicate operating procedure and understand the machine key functions


Start-up Machine:



1. TURN ON the main switch.




2. SWITCH ON the machine.




3. OPEN the air valve.


Machine's Adjustment:



4. Adjust conveyor's level according to bottle's size.



5. Adjust distance and height of filling pipes follow bottle's size.



6. Make sure the nozzles and bottle's inlet is align.


Macro Chemical Sdn Bhd	Document No.	PRD-FM03
	Revision	0
	Effective Date	28 MAY 2021

Machine Start-Up Procedure


Standard Operating Procedure for Filling Machine 3

Objective: To indicate operating procedure and understand the machine key functions


Machine's Running Procedure:




7. TURN RIGHT the button to transfer liquid from storage tank into filling machine storage.




8. Proceed for the next step after filling machine storage is filled with the liquid.



9. PRESS yellow button to move the nozzle into bottle. TURN RIGHT blue button to fill in the liquid into a bottle.



10. ENSURE that each nozzle enters the bottle's inlet perfectly.



11. After liquid is fully filled, TURN LEFT blue button to stop the filling process. PRESS back yellow button to uplift the nozzle.

Prepared By: _____ Approved By: _____

Fahmi Osman Ong Beon Sen

Figure 6 Working Instruction of a Filling Machine

2.4.1 Daily activities

a) Conduct pH test on the samples

pH test is very important as we done it during the production process so that the product we made have the desired pH value. We constantly check the pH value during the production process so that we will not have to waste it. We use pH paper as we will dip it into the product which is still in making process in the mixer tank. Next, we will take a sample to run a few tests for example viscosity and pH test which will be more accurate and efficient. Then the sample will be put into the heater for 3 months. This is to ensure the quality of the products. After 3 months, the samples will be run pH test once again and all the value being taken and recorded as well. pH meter is being used to ensure we get the accurate value. Figure 5 shows of me doing pH test on the samples which is laundry liquid.



Figure 7 Conduct a pH test on laundry sample.

(b) Do filling and packing products

Once the chemical products is fully done, next process is filling process which is either manually or automatically. Manually is by using our hands meanwhile automatically is by filling machine. Manually meaning that we just need to use valve which act as switch to let the liquid flow into the packaging. This method is slow as it depends on the operators capabilities. In the meantime, use filling machine also have the disadvantage as if a failure occur it will be take a long time to fix it compare to manual method. After filling process is done, next will be packing where all the products will be put into box and ready to transport. Each process is very important even though it seem simple and easy but it holds very important aspects for example if the product is defects in terms of the packaging is not properly seal which will cause leaking. Figure 7 shows filling and packing process.



Figure 8 Filling and Packing Process

CHAPTER 3

CONCLUSION & RECOMMENDATION

3.1 Challenges and Solutions

There are a few physically and mentally challenges that I had to encountered and overcome during my internship period from March until July 2021. One of challenges is definitely when the implementation of the movement control order from 7 Jun 2021 until 28 Jun 2021 which cause trainee to either work from home, their internship period being extended or work outside of office hours. The solution is to ask for permission to the supervisor or human resource department to give the trainee work from home not just because for their safety but also other employers' safety. Other than that, I should be ready to be called at any time for overtime and do any kind of works. Other challenge is that the task given is relate to an old machine which is a bit difficult to get the task done. The solution that I got for this challenge is that i ask many people to help me out getting the missing and unfound information for completing the task successfully. Other solution that I find it really important to solve any kind of problems or challenges is that the importance of communication skills within the organization.

3.2 Knowledge and Skills

There are a lot of new skills and also knowledge that I got throughout 18 weeks of internship. First of all, how to make a high quality and big amount of liquid detergents for example stain removal, dishwashing liquid and also hand sanitizer. I learned that every chemical substances used in detergent-making process plays an important roles which is to make a high quality detergent.

3.3 Suggestions

There are a lot of improvements that can be done to increase the quality and efficiency of the industrial training as a subject, the suggestions should be taken seriously to ensure it more efficient and also organized in the future. First, the students should be ready and exposed to the working and industry environment by making a visit to related industry. Next, what lecturers can do is by giving the students assignments and tasks for example a case study that tells what is industry field really is. Last but not least, all the supervisors at each company should do research about the course of the students that they will take under them to avoid any problems in giving them task and assignments to fulfil the subject's requirements. The supervisors should give work or task to the students that can develop skills that needed in the industry. The supervisor also responsible to monitor and supervise the students' works and performance in order to improve their soft skills and also critical thinking.

3.4 CONCLUSION

There are lot of things and new knowledge and also experience I gained throughout 17 weeks of time at Macro Chemicals Sdn Bhd (MCSB), it was a pleasant and incredible memory. I am grateful and thankful that I got the opportunity to get do my internship at MCSB as I meet great people which helps me out throughout my internship. There are a lot of things I encountered which I never faced before this and it is really helps me a lot in many and different kind of ways. I be able to build my confidence level and self-esteem. Besides, I am really grateful having my supervisor and also officemates that always help me out and gives me proper guidance. This is because I admit that I would never do anything rights without proper guidance from them. I realized that my communication skills has been improved day by day as chain of communication is really important in working place.

In addition, Production Unit provides me with the real working environment as there so many things that I can be implement the work scope with my abilities, strength and knowledge which they very much help me a lot go through my internship. I felt thankful and also grateful as I got this opportunity to learn and work hard from this amazing new experience. Besides that, I also learn how to work with others which is very much in a way to work in an organization. There are many new skills I obtained throughout this internship as it is important to be punctual, the importance of being responsible and giving maximum commitment and also the importance of teamwork. Many challenges and obstacles that I faced at work but I believe this is just for me as a journey to become adult and wiser. This is what I can called learning process as I get to learn new things every single day. In fact, I enjoyed it as this is what the purpose of internship where I got to learn and experience at the same time.

After 17 weeks have passed, I gained new perspective and more comprehensive understanding about how the industrial place works. I noticed that I improved a lot of my soft skills. Nevertheless, I am sure that there are things that I can never experience during previous semester studies.