



UNIVERSITI TEKNOLOGI MARA
FACULTY OF INFORMATION MANAGEMENT

INDUSTRIAL TRAINING REPORT:
PUSAT PENGETAHUAN, KOMUNIKASI DAN TEKNOLOGI (PPKT)
KAMPUS KESIHATAN, KUBANG KERIAN
KELANTAN

SPECIAL PROJECT:
“USM INVENTORY SYSTEM-MODUL PENAMBAHAN”

BY
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IM245 – BACHELOR OF SCIENCE (HONS)
INFORMATION SYSTEM MANAGEMENT
FACULTY OF INFORMATION MANAGEMENT
UNIVERSITI TEKNOLOGI MARA KELANTAN

01 AUGUST 2018 – 31 DECEMBER 2018

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**BY
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**REPORT SUBMITTED IN FULFILLMENT OF THE
REQUIREMENT FOR THE INDUSTRIAL TRAINING
FACULTY OF INFORMATION MANAGEMENT
UNIVERSITI TEKNOLOGI MARA KELANTAN**

01 AUGUST 2018 – 31 DECEMBER 2018

DECLARATION

I hereby declare that this is my original work. I have not copied from any other student's work or from other sources. I am also declare that no part of this report has been published or submitted for publication except where due to reference or acknowledgement is made explicitly in text, nor has any part been written for me by another person. I confirm that I have read and understood the UiTM regulations with regards to plagiarism and will be penalized by the university if found guilty.

Signed by

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Date of submission: January 2019

ABSTRACT

In this report, its provide a comprehensive description about the practical training which is are being carried out at Pusat Pengetahuan, Komunikasi Dan Teknologi (PPKT) Kampus Kesihatan, USM Kubang Kerian for 5 months period. There are 4 chapter's content which include introduction to an organization which are USM Kubang Kerian and Pusat Pengetahuan, Komunikasi Dan Teknologi (PPKT). Various department which carry a different role and different job scopes, than the activities that are carried out during the practical training and lastly the lesson gained during the time period of training.

Keyword: Pusat Pengetahuan, Komunikasi Dan Teknologi (PPKT), practical, job scopes, USM KK

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First and foremost, I would like to express my thanks to Allah because of His love and strength that He has given me to finish this internship report. I do thank for His blessings to my daily for good health, healthy mind and good ideas.

For this opportunity, I am very delighted to do the industrial training at Pusat Pengetahuan, Komunikasi Dan Teknologi (PPKT) Kampus Kesihatan department in USM Kubang Kerian Kelantan. It is because they allowed for giving me the occasion to undergo my internship for 5 months. Starting from 1st August 2018 until 31th December 2018 in Information Technology (IT) department for providing me with good facility as well as to work in a friendly environment.

I also would like to express my great appreciation and gratitude to my host academic supervisor En. Mohamad Rahimi Mohamad Rosman and company supervisor, Puan Zamilah Hussain as well as other staff in this department for their excellence supervision, valuable advice, feedback and tips as well as their kindness in guiding me to improve my experience on how to work in a team.

They allowed me to encroach upon their precious time from the very beginning of this work till the completion. Without their expert guidance, assistance, direction, affectionate encouragement, comments, suggestions, support, critical suggestions and constructive criticism from time to time throughout this internship it could have been rather difficult for me to complete the whole work in an efficient manner.

I would also like to say thank you and show my gratitude for my beloved parents as well as my family for their understanding and supporting throughout my internship program. In addition, special thanks to all interns that I worked with and spend good moments together in brainstorming ideas, sharing experiences, information, time and I feel grateful towards each of them who endlessly helping me in time of need, show supports and valuable friendship which helps me to keep strong and be independent.

Thank you.

TABLE OF CONTENT

Student Profile	i
Declaration	ii
Abstract	iii
Acknowledgement	iv-v
Table of Content	vi

CONTENTS

CHAPTER 1: INTRODUCTION

1.1 Introduction About Practical Training	1-2
1.2 Background of Institution	2-4

CHAPTER 2: ORGANIZATION INFORMATION

2.1 Introduction Department Structure	5-7
2.2 Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT)	7-10

CHAPTER 3: INDUSTRIAL TRAINING ACTIVITIES

3.1 Training Activities	11-17
3.2 Special Project	17-27

CHAPTER 4: CONCLUSION

4.1 Application of knowledge, skills and experience in undertaking the task	28
4.2 Personal thought and opinion	29-31
4.3 Lesson learnt	31-32
4.4 Limitations and Recommendations	32-33

CONCLUSION	34-35
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REFERENCES	36
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APPENDICES

LIST OF FIGURE

Figure 1: Universiti Sains Malaysia (USM), Logo	2
Figure 2: Universiti Sains Malaysia (USM), Brand	4
Figure 3: Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT), Logo	5
Figure 4: Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT), Organization Chart	8
Figure 5: System Development Life Cycle (SDLC)	10
Figure 6: Internship Student Arduino Project Briefing	11
Figure 7: Briefing from Network Unit	12
Figure 8: Briefing from Application Unit	13
Figure 9: Data Centre Unit Site Visit	13
Figure 10: Data Centre Unit Briefing	14
Figure 11: Exposure from Hospital Management System Unit	14
Figure 12: Briefing from Technical Support Unit	15
Figure 13: Access Door Tools from Technical Support Unit	15
Figure 14: Video Conference Tools from Communication Unit	16
Figure 15: Communication Unit Site Visit	16
Figure 16: GitLab briefing	17
Figure 17: Additional Module menu	20
Figure 18: Products functions	21
Figure 19: Add productions functions	21
Figure 20: Category functions	21
Figure 21: Add new category functions	22
Figure 22: Supplier functions	22
Figure 23: Add new supplier functions	22
Figure 24: Transaction between Store & Hospital	24
Figure 25: USM.IS Context Diagram	26
Figure 26: USM.IS Data Flow Diagram	26
Figure 27: USM.IS Entity Relationship Diagram	27

CHAPTER 1:

INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1 Introduction about Industrial Training

The student who undertakes industrial training is responsible mainly to complete the project and tasks assigned by the organization within the stipulated time frame. As we know, internships provide real world experience to those looking to explore or gain relevant knowledge and skills require entering into particular career field. Internship relatively short term in nature with the primary focus on getting some on the job training and taking what's learned in the classroom and applying it to the real world.

The industrial training held for five months from 1st August 2018 until 31th December 2018, as one of the requirements for the award of Bachelor of Science Information (Hons.) System Management that student should fulfil the industrial training at Universiti Sains Malaysia (USM) Division of Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT) for 22 weeks. It is intended to provide useful knowledge and to train the students in order to prepare themselves in the real world and working environment. During the industrial training session, many principals and theory regarding organizational function are put to into effect. Most students are prepared with a structure towards learning how the organization works in real life so that the subject learned which is IMC 690 Industrial Training can be applied. Most the faculties in Universiti Teknologi Mara (UiTM) provided industrial training to the students and expose the students to the valuable experience in conducting a real experience in the industry after this.

The training is provided in order to fulfil the requirements of the IM245 program which is Bachelor of Science Information and System Management. In this training, students will be exposed to the office environment, how to handle various functions in managing information

are taught. Besides that, it also is very useful in preparing the students to be industry ready professional where all the previously learned the theory will put into immediate effect. It provides insights into the intricacies involved in working in various area of the profession as well as inculcate commitment to work, apply knowledge to industrial situation, hone technical and soft skills, get acquainted with professional work environment and develop ethical values.

After training had been complete, hope the students are able to implement everything that already learnt in the industry and provide a huge contribution to the related organization. The details of the organizational structure and nature of training session will be explained in the following chapters.

1.2 Background of Institution



Figure 1: Universiti Sains Malaysia (USM), Logo

Established as the second university in the country in 1969, Universiti Sains Malaysia (USM) was first known as Universiti Pulau Pinang. In 1971, USM moved from its temporary premises at the Malayan Teachers' Training College, Bukit Gelugor to the present 416.6 hectare site at Minden, approximately 9.7 km from Georgetown.

USM offers courses ranging from Natural Sciences, Applied Sciences, Medical and Health Sciences, Pharmaceutical Sciences to Building Science and Technology, Social Sciences,

Humanities, and Education. These are available at undergraduate and postgraduate levels to approximately 30,000 students at its 17 Academic Schools on the main campus in the island of Penang; 6 Schools at the Engineering Campus in Nibong Tebal (approximately 50km from the main campus); and 3 at the Health Campus in Kubang Kerian, Kelantan (approximately 300km from the main campus).

USM also has 17 dedicated research centres for a wide range of specialisations which include archaeology, medicine and dentistry, molecular medicine, science and technology, Islamic development and management studies, and policy research and international studies. It also provides consultancy, testing, and advisory services to the industry under the ambit of USAINS Holdings Sdn Bhd, the University's commercial arm.

Since the beginning, USM has adopted the School system rather than the traditional Faculty system to ensure that its students are multi-disciplined from their exposure to other areas of study by other Schools. It also encourages students to be active in extra-curricular activities given the myriad of clubs and societies available.

As a Research Intensive University recognised by the Ministry of Higher Education Malaysia (MOHE) in 2007, USM offers educational and research opportunities to students and staff. In 2008, USM also became the first university in the country to be selected by the Malaysian government to participate in the Accelerated Programme for Excellence (APEX), a fast-track programme that helps tertiary institutions achieve world-class status.

1.2.1 Vision

"Transforming Higher Education for a Sustainable Tomorrow

1.2.2 Mission

USM is a pioneering, Trans's disciplinary research intensive university that empowers future talents and enables the bottom billions to transform their socio-economic well-being.

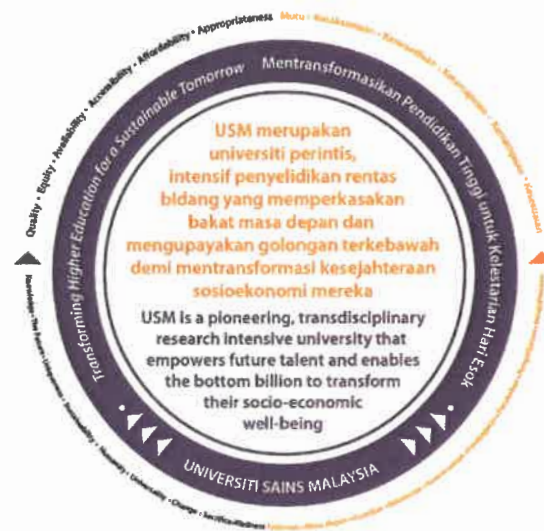


Figure 2: Universiti Sains Malaysia (USM), Brand

1.2.3 Value

Quality, Equality, Availability, Accessibility, Affordability, Appropriateness

1.2.4 Thrust

Knowledge, the Future, Uniqueness, Sustainability, Humanity, Universality, Change, Sacrifice, Wellness

CHAPTER 2 :

ORGANIZATION

INFORMATION

CHAPTER 2

DEPARTMEN STRUCTURE

2.1 Background of Department



Figure 3: Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT), Logo

Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT) was established on 1st January 2003 with a combination of four information technology-based entities in Universiti Sains Malaysia namely Pusat Komputer, Pusat Teknologi Maklumat, Unit Sistem Maklumat Pengurusan (SISMAP) and Unit Pembangunan Teknologi Maklumat at USM main campus. PPKT official launch was officiated by Vice Chancellor, Yg Bhg Prof Dato' Dzul kifli Abd Razak on 27th August 2003. PPKT serve as a center for providing IT services in USM. USM PPKT Health Campus located at Kubang Kerian, Kota Bharu.

PPKT Health Campus now is only a change of name for Cawangan Pusat Komputer. Cawangan Pusat Komputer started with only one staff in 1986 and now continues to grow. In 1996 Cawangan Pusat Komputer started service called the Hospital Information System and also distributed PCs to all lectures, category "A" officers and departments to introduce the USMNet network services which was the core of PPKT service until now.

The Hospital Information System services was eventually taken over by the HUSM Information System Unit in 2000. The number of staffing is up to 101. The deputy director of PPKT is HJ Nik Nashron Ab. Aziz.

2.1.1 Mission

1. PPKT's mission is to provide quality and quality services and infrastructure of Information Technology. Coordinate processes involving academic, student, administration and management through website portals for the purpose of transfer and sharing of information in order to enhance the knowledge and expertise of Information Technology among USM citizens.
2. Guiding and being a source of inspiration to University students in the evolving flow of Information Technology. Ensuring the University's vision of becoming a premier institution of study and research will come true with Information Technology as a catalyst.
3. Build a knowledgeable and informed campus community in Information Technology. Become a referral center for Information Technology related matters. And to cultivate campus society with Information Technology.
4. Offering quality service in support of R & D activities, teaching & learning of higher education and providing innovative and creative ICT infrastructure in USM. In addition, PPKT is also an "enabler" to the science and knowledge environment.
5. Unify academic, student, administrative and management services and society through an information portal and its web-based transfer. With

the establishment of PPKT will pioneer more new developments for the convenience of dealing, serving, and generating, storing and disseminating knowledge as wide as possible.

2.1.2 Objective

1. All applications will be reviewed and approved within 3 (three) working days from the date the completed application form is received.
2. All applications will be reviewed and approved within 3 (three) working days from the date the completed application form is received.
3. Process and send all bills and claim payments to the Treasurer's Department within three (3) days from the date of receipt of the bill.



**CARTA ORGANISASI
PPKT Kampus Kesehatan**

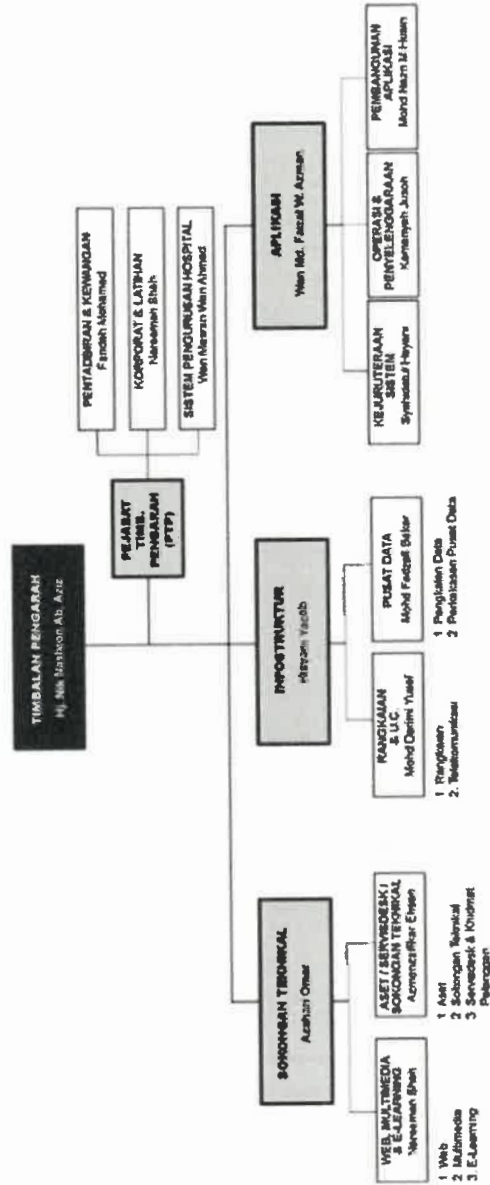


Figure 4: Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT), Organization Chart

DEPARTMENT FUNCTION

2.2 Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT)

PPKT have four IT section that is Pejabat Timbalan Pengarah (PTP), Technical Support, Infostructure and Application. Each section has its own task to manage PPKT Health Campus. The Technical Support section is headed by Encik Azahari Omar. This section divided into two sub section which is web, multimedia, e-learning manage by Encik Nareeman Shah and asset, services desk, technical support managed by Encik Azmanzaifikar Ehsan. The technical support section serves for provides technical services, procurement, distribution and management of IT equipment. In addition, it also works as managing assets, website management and multimedia.

Meanwhile, the department structure section headed by Encik Hisyam Yacob. Main services of the department structure section is to provide, manage and maintain technical support for network systems, IT security, telecommunications, data centers and database located at USM Health Campus. Only 4 staff involves in maintaining data centers and database based on MSSQL and MySQL for application. They also manage video live connection in USM Health Campus for in inside and also to USM Engineering Campus Pulau Pinang.

I was task to the Application Section under supervision of Puan Zamilah Hussin as the Information Technology Officer. Three units in application is System Engineering, Operation and Maintenance and Application Development. Main activities in Application section is developing, maintaining and providing services support for applications at the PPKT Health Campus or by Main campus and Engineering Campus. The Application section required all staff to involve with the development activities, maintenance and application support of all time.

2.2.1 Training Structure

I have undergone industrial training under the supervision of Puan Zamilah Hussin. Each task given by module through GitLab application.

2.2.2 Scope of Training

My scope of training is to build a system called “Inventory System”, my task is to create new version of the system that already exist. This task is given by module, and my part is *“user manager and full production”*. Besides that, to develop this is system, I was assigned to use simple PHP language.



Figure 5: System Development Life Cycle (SDLC)

Figure 5 shows the SDLC model that is being used to develop the system. The system development should follow the rules of SDLC model. I have to undergone all activities in the model except the maintenance activity as I finished my training on January.

2.2.3 Training Objective

The training objective is to reveal towards industrial way of work, to be able work in Information System environment in a professional way, to be able to use the knowledge that gain from university and serve the industrial.

CHAPTER 3 :

INDUSTRIAL

TRAINING

ACTIVITIES

CHAPTER 3

INDUSTRIAL TRAINING

3.1 Training Activities

IT sections talk and sharing. In this programs, each unit in PPKT show how they work, technology used, requirement to be worker and site visit. Participant have chance to visit video conference room, communication services and database center. A lot exposure to current PPKT technology in this program. This program running for 6 day in 3 week.

1. Internship Student Arduino Project Briefing



Figure 6: Internship Student Arduino Project Briefing

Figure 6 shows internship student give briefing on her Arduino project in PPKT. The project is about attendant and read user card contain information include name and staff number. The system almost 90% finish and now given to other internship student because last assigned already finish internship at PPKT Health Campus.

2. Briefing From Network Unit

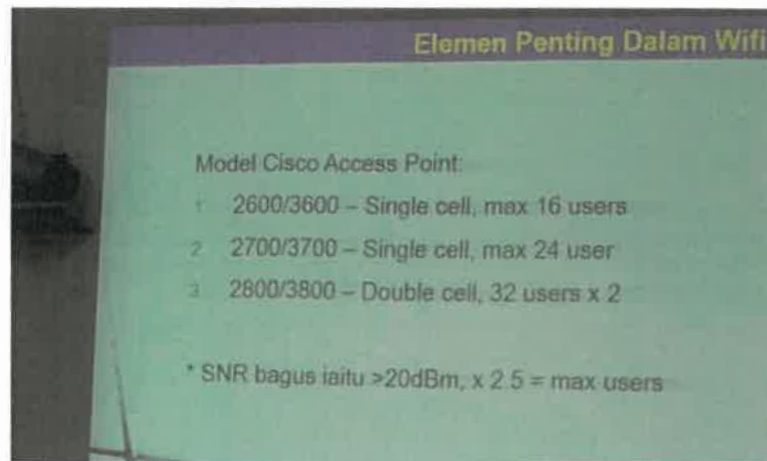


Figure 7: Briefing from Network Unit

Figure 7 shows information given from Network Unit by Encik Darimi. Currently for only 4 staff involve in network unit. In this session Encik Darimi show type of wireless connection devices and their performance for example wireless AC speed up to 1Gbps while wireless N 300Mbps, wireless G 54Mbps and wireless B as low as 11Mbps. There is also two type of frequency which is 5GHz with shorter range 115 feet and 2.4GHz up to 230 feet. All this information included in WLAN Standard: IEEE 802.11. For frequency 2.4GHz, it contain three channel that is 1, 6 and 11. While 5.0GHz contain up to 165 channel. Participant also learn about half duplex and full duplex in wireless connection.

3. Briefing from Application Unit



Figure 8: Briefing from Application Unit

Figure 8 shows learning session from Application Unit by Encik Wan Md. Faizal and Encik Mohd Nazri. Information provide for this session including framework used in web development such as QT, Code igniter (CI) and Ruby on Rails. There is similarity between CI and Ruby on Rails based on Model-View-Controller (MVC) in this two framework. In term of performance, Ruby on Rails slightly faster than other three framework used.

4. Data Centre Unit Site Visit



Figure 9: Data Centre Unit Site Visit

Figure 9 shows server setup in PPKT Health Campus. Participant have a chance to see up close server. Only four staff involve in maintenance up to 119 server in there.

5. Data Centre Unit Briefing



Figure 10: Data Centre Unit Briefing

Figure 10 shows speech given by Encik Razmi from Data Centre Unit. This session allow participant to know about Denial-of-service attack on server. Main operating system used in Data Centre Unit is Linux

6. Exposure from Hospital Management System Unit



Figure 11: Exposure from Hospital Management System Unit

Figure 11 shows information sharing by Encik Wan Masran Wan Ahmad from Hospital Management System Unit. This unit exist to assist

and support university aspirations in the implementation of Enterprise Architecture to transform Hospital Management System more efficient and productivity. Main idea is to combine and integrated between many system involve in hospital in to simplest form.

7. Briefing from Technical Support Unit



Figure 12: Briefing from Technical Support Unit

Figure 12 shows program session with Technical Support Unit. This session provide information on type of access door used in PPKT which is modular and smart lab.

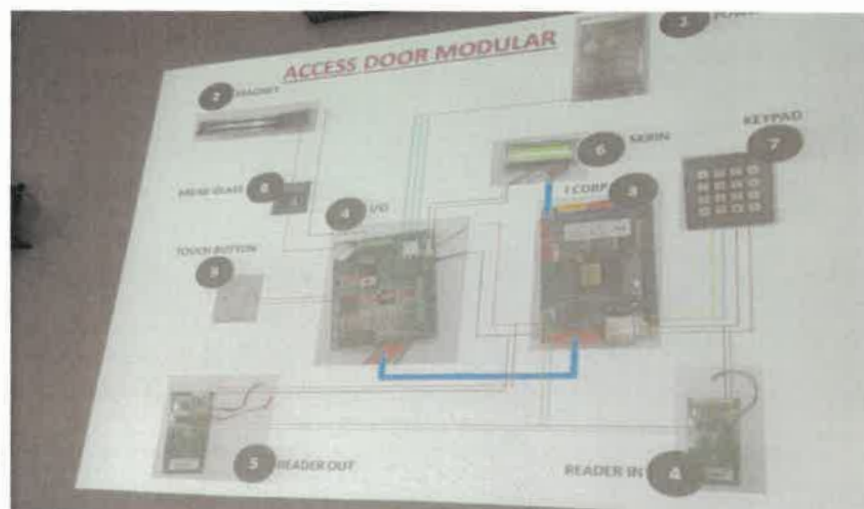


Figure 13: Access Door Tools from Technical Support Unit

Figure 13 shows access door tools provide from Technical Support Unit. This is modular type access door which one main maintenance for this

unit. Only three staff involved in this unit assisted by internship student assigned for Technical Support Unit.

8. Video Conference Tools from Communication Unit

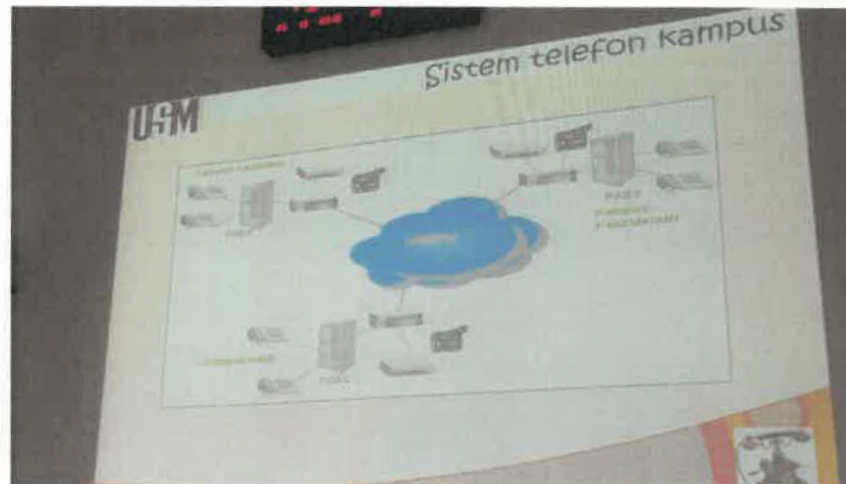


Figure 14: Video Conference Tools from Communication Unit

Figure 14 shows video conference tools used by USM Health Campus and also USM Engineer Campus at Pulau Pinang. This session provide from Communication Unit by Encik Solahasni. Hardware used for video conference including VCS which is gatekeeper, Multi Conference Unit (MCU) and endpoint. Software used is Microsoft Lync and Cisco WebEx.

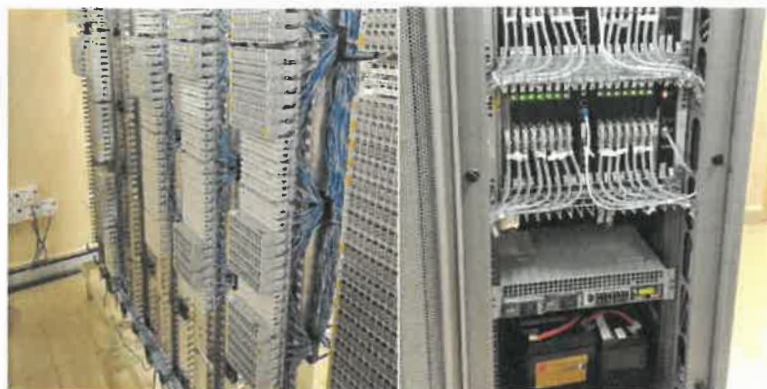


Figure 15: Communication Unit Site Visit

Figure 15 shows Communication unit site visit where all telecommunication in USM maintenance here. Battery used to backup electricity if power down and this cost approximately RM1.5Bilion.

9. GitLab briefing

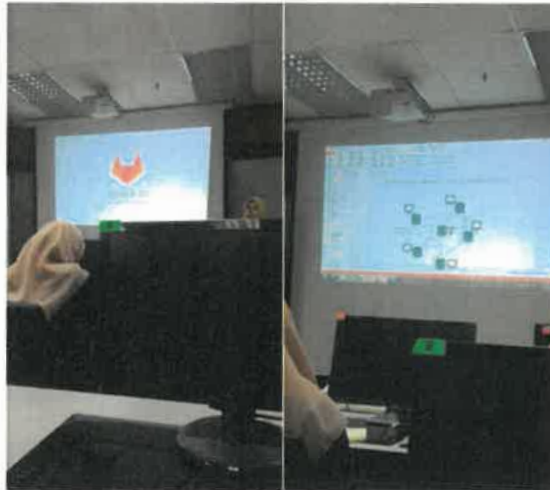


Figure 16: GitLab briefing

Figure 16 shows the presentation make by Puan Syikin about GitLab, GitLab is an open source code repository and collaborative development platform. GitLab offers a location for online code storage and collaborative development of massive software projects. The repository includes version control to enable hosting different development chains and versions, allowing users to inspect previous code and roll back to it in the event of unforeseen problems.

GitLab is a competitor to GitHub, the code repository that hosts Linus Torvalds' Linux kernel development, among many other projects. As GitLab is developed on the same Git basis of version control, it functions very similarly.

Some of GitLab's features include:

- i. LDAP integration
- ii. Open source code library
- iii. Free hosting and services
- iv. Bug tracking mechanism
- v. File editing in the web interface

GitLab supports both public and unlimited private development branches. In contrast, some competitors, such as GitHub, charge for private repositories, while others, such as Bitbucket, charge for additional users over the five allowed for free on a private repository.

3.2 Special Project

On 1st August, 2018 I have enrolled at the Registrar Office of Universiti Sains Malaysia Health Campus. I was assigned to Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT) and under the supervision of Puan Zamilah Hussin, who is an IT officer at PPKT.

The first assignment given by Puan Zamilah Hussin is to study about "*Tatacara Pengurusan Stor (TPS) Kerajaan Bahagian Perolehan dan Pengurusan Aset, KPM*", this TPS aims to manage the stocks covering Receipt, Record, Storage, Production, Inspection, Safety, Hygiene, Disposal, Loss and Erasure. After a few months studying this concepts of TPS, Puan Zamilah Hussin ask me to develop a new version of inventory system by using System Development Life Cycle (SDLC) model, the system is divided into two modules, first module is "**additional**" and second module is "**production**", by this two modules given, I was assigned to finish the first module. After gathered information, I manage to determine how the system works based

on categories given and was accepted by Puan Zamilah Hussin. The users involved with this system is Admin and User, the language was used to develop this system is PHP.

3.2.1 Summary of the system

Inventory System is the system that will monitors and record all transactions about additional and production of goods that involving in store management. There are two users that involved with this system which are Admin and User. On first module only Admin will involves. On this module, Admin can organize products, suppliers, categories and users.

Next is User, they can only use this system for production only. Besides that, this user only can be determine by the Admin only that will give the “id” and “password” to login into this system, this method is taken in order to control the security of the system, the user also will select based on their duties and responsibilities in the institution, which mean not all staff can use this system. The items in this system will be divided into three (3) categories, which is, Expired Dated, Glassware, and Laboratory. All this items is used by hospital management to carry out their duties, currently there are 470 list of the items should be included in this system.

3.2.2 Task divided by Module

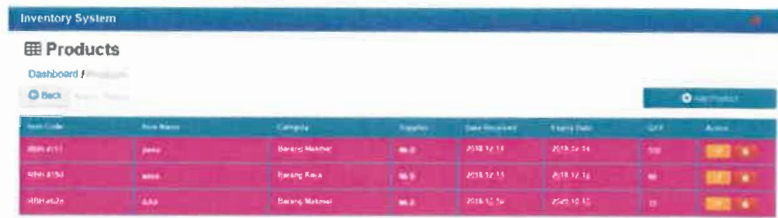
1. User Manager (First Module)

The First Module is “Modul Penambahan” which is fully organize by Admins. Every admins need to login into system before use the system. After that, Admins can add any products that was given under Products

function and Admins also can delete or edit the products if there was any mistake occurred. Next, Admins can add category of products under Category functions. They also can edit or delete if something bad happened. Currently only three categories which are Glassware, Expiry Date and Laboratory products. Admins also can add suppliers into the system under Supplier function. They can manage suppliers by making a list of supplier by contains contact numbers, name, address of the company and note in case if the suppliers want to give any remainder. Last function in this module is User Manager. This function is made by my partner for this projects. Basically, this function only can be used by Admins only which empowered to control and monitor all the system, this function enable the “Admin” to create a new accounts for another users either to add another “Admin” or to add another “User”. This system only can be used by two users only, which is “Admin” that control the system and used all functions that have inside the first module and second module, and “User” that only can used the second module only.



Figure 17: Additional Module menu



Item Code	Item Name	Category	Supplier	Date Received	Expiry Date	QTY	Action
Item #101	Generic	Generic Material	ABC	2018-12-11	2019-12-31	100	[Edit] [Delete]
Item #102	Generic	Generic Food	ABC	2018-12-11	2019-12-31	50	[Edit] [Delete]
Item #103	Generic	Generic Material	ABC	2018-12-11	2019-12-31	20	[Edit] [Delete]

Figure 18: Products functions



Add Product

Item Code:

Item Name:

Category:

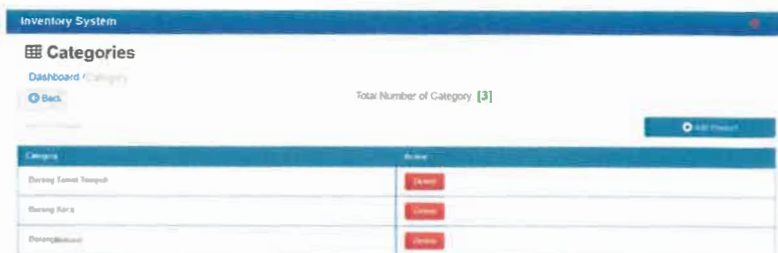
Supplier:

Date Received:

Expiry Date:

Quantity:

Figure 19: Add productions functions



Total Number of Category [3]

Category	Action
Generic Material	[Delete]
Generic Food	[Delete]
Generic Material	[Delete]

Figure 20: Category functions



Figure 21: Add new category functions



Figure 22: Supplier functions

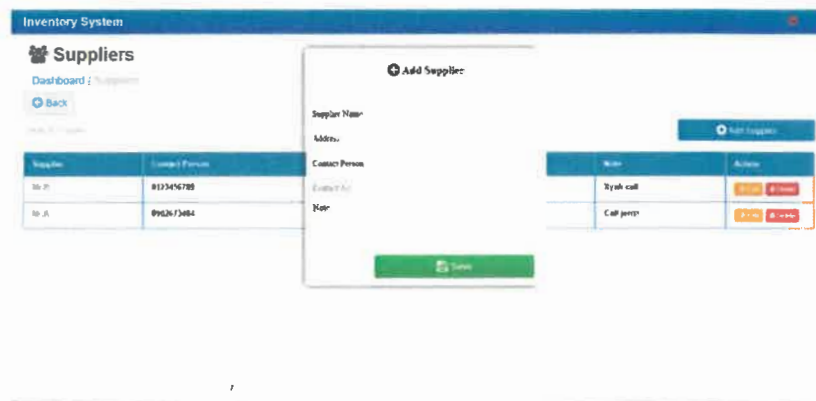


Figure 23: Add new supplier functions

3.2.3 Objective

1. Avoids Stock-Outs

Making sure that user have access to products when they need or want them.

2. Avoid Excess Inventory

Optimized inventory control actually balances a fine line between too much and too little. In fact, a main reason companies have gone to just-in-time systems and advanced software solutions is to avoid having excess inventory while trying to meet demand.

3. Move Goods Efficiently

Efficiency in inventory means the ability to quickly receive and store products as they come in and retrieve and ship when they go out.

3.2.4 Scope

Inventory System, was develop for Hospital used. This system allows them to access the information about quantity of products that related to the prescribed category such as Expired Dated, Glassware, and Laboratory. The system focus on two users only, which is “Admin” that maintains the store management in terms of stock control, stock storage, stock distribution and others. Meanwhile, the second user called “User” will used this system for production only.

For Admin, they will be given the authorities to add another users to use this system which is “Admin” and “User”. Besides that, this system cannot be used by all staff, only selected staff only will be given authorities to access and used this system, only staff that are chosen by institution only will be given “id” and

“password” by Admin that control this system. The transaction of this system will be fully used by store management and hospital management only.



Figure 24: Transaction between Store & Hospital

3.2.5 Hardware and Software Description

3.1.5.1 Hardware

1. Laptop

HP Laptop 14-bs0xx	
Device name	: LAPTOP – J68PKKMQ
Processor	: Intel® Core™ i3-6006U CPU @ 2.00GHz 1.99GHz
Installed RAM	: 4.00 GB (3.89 GB usable)
System type	: 64-bit operating system, x64-based processor

Table 1: Laptop description

3.2.5.2 Software

1. Software

- **Wamp Server 2.0**

Wamp Server is a Windows web development environment. It allows creating web applications with Apache2, PHP and a MySQL database. Alongside, Php MyAdmin allows managing easily the databases. The function by using this software is as the temporary server for the system which is only for simulation not the actual system.

- **PHP**

PHP is general-purpose server-side scripting language originally designed for web development, to produce dynamic web pages. It is one of the first developed server-side scripting languages to be embedded into an HTML source document, rather than calling an external file to process data.

- **Adobe Dreamweaver CS6**

Adobe Dreamweaver CS6 is the industry-leading web development tool, enabling users to efficiently design, develop and maintain standards-based websites and applications. Adobe Dreamweaver is available for both OS X platform and Windows. Recent versions have improved support for Web technologies such as CSS, JavaScript, and various server-side scripting languages and frameworks including ASP, ColdFusion, and PHP.

3.2.6 System Flowchart and Diagrams

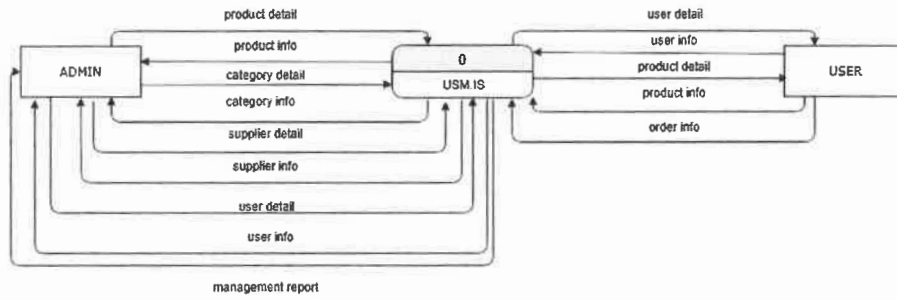


Figure 25: USM.IS Context Diagram

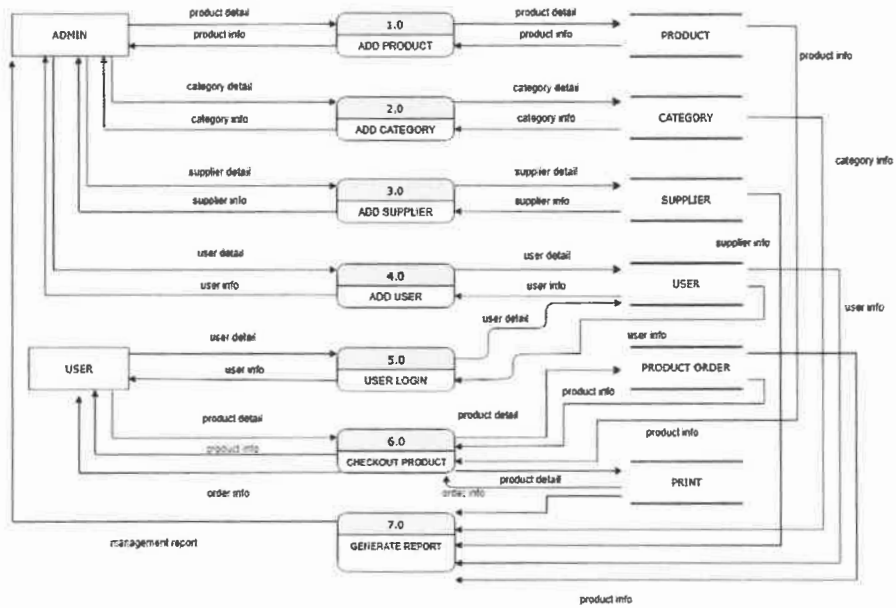


Figure 26: USM.IS Data Flow Diagram

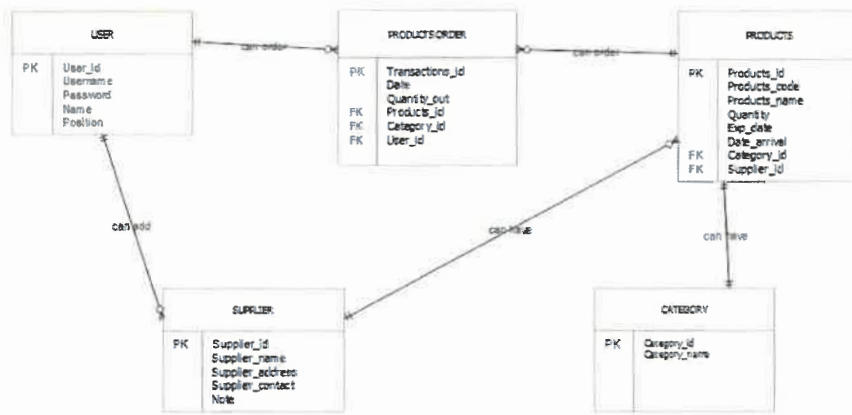


Figure 27: USM.IS Entity Relationship Diagram

CHAPTER 4 :

INDUSTRIAL

TRAINING

REFLECTION

CHAPTER 4

4.1 Application of Knowledge, Skill and Experience in undertaking the task

(Knowledge gained)

Along five (5) months practical training in PPKT Health Campus give a lot of new experiences to me. From this training, I was able to feel the real situation of becoming one of the staff in PPKT Health Campus. As been said by the lectures, the true nature of work really different from the way that was learned in the classes.

4.1.1 Interpersonal Skill

This is most of common and one of the most important skills during internship period. This skill helps a person to interact with others in much better and pleasant manner. It is an art to present one's views, thought, and ideas before its listeners. During trainee internship period, it helped me to build good report with the other employees who guided me in the best possible manner. The interaction and dealings with the staff helped me to build social network.

4.1.2 Build the Relationship

In early, it is really awkward to communicate with the other staffs in the department. However, in order to manage the awkwardness between me and the other staffs, I was able to approach and introduce myself to them. Day by Days, I was recognizes that the senior staffs actually are quite friendly with new out comers. They could accept the new members without being of any compromise. So, it is easier for me to communicate with them.

4.2 Personal Thoughts and Opinion

4.2.1 Personal Thoughts

Based on industrial training session, I was able to manage and learn new working experiences from the real working situations that been showed by the PPKT Health Campus staffs.

- **Proper Self-Management**

A proper self-management helped me in handling the entire practical session. During the practical session, a good self-management has taught me to handle the entire task perfectly. Different with having complication with job, it also could increase quality and productivity towards our job and projects because good environment will drive us into improvement in work surrounding.

- **Time Management**

I had felt that, a lot of lesson learnt that has been acquired during this training and one of them is time management. A good time management is being showed by most of PPKT Health Campus staffs. Early come to the office but usually become the last person went to home could be great motivation for me. Most of seniors' staff will come to the office at 7.30 am in the morning. This is because, it will help them to prepare early in order to face a lot of requirement on the days.

- **Communications and Soft Skills**

The main lesson learn I was gained while working under PPKT Health Campus are communications and soft skills. This communication skill is very important in order

to help me being very successful person in life. This also helped me to become quick-thinker to persuade audiences.

Besides, by meeting the staff every day, this will makes me try to communicate with them in different ways since being one of PPKT Health Campus staff. This is because, in PPKT Health Campus there are staff with difference of expertise in solving problems. So, in order to handle and solve their problems, we need to communicate with them with suitable approach based on their situation and problem. A good soft skill will helps me in communicate approach and the way to solve any problem occur.

- **Work Experience**

Work experience is important for a fresh graduate student. This is because a valuable opportunity for students to gain experience before getting into the real working world. With the knowledge, skills and experience it will give students the opportunity to put what they learned into practice. Besides that, work experience also provides the ideal preparation for a future interview, because the student will have examples and experience to bring in an interview. Once have some form of practical experience in the workplace, having overcome a difficult interview questions by using existing knowledge.

4.2.2 Opinion

In my opinion, this industry practical is an important thing as it can trained the skills learned by students in their learning in the lecture hall where it can be applied effectively. This can becomes one of branches to build self-confidence for students to adapt the real working world that will be encountered in the future. This is because the

industry practical has been provided appropriate disclosure regarding the ins-outs of preparing students for work in the working environment in the future. In addition, it also had allowed me to know the purpose of the lessons in the management of the resources that I have learned.

The program not only able to increase my self- confidence to face the real working environment, but also had helped me improve the way I communicate with people. Cooperation in the training of staff is very good and this has taught me how the great sense of cooperation. I felt very proud and fortunate to have the opportunity to undergo training in this industry. This is because at present, to get a job in any organization or company we must have the skills that we're in position.

During 5 months industrial training at PPKT Health Campus, I am satisfied with the cooperation attention and guidance that have been provided by the staff no matter what their rank or position. Knowledge and skills acquired during the practical have helped me a lot in improving the performance capability and identify weaknesses that exist in addition to sharpen the theory learned in college.

4.3 Lesson Learnt

There are a lot of learning experience that I had received. I had experienced industrial way of working environment. Thus, I learnt to be in a good attitude while performing the industrial training. I also learnt that different industry has different ways of working as the experiences that I have gathered being shared among other trainees from different departments and different company. I had experienced the technologies use in industry and how different organization could be invited and joint together with PPKT Health Campus to solve problem and work together. I also have opportunity to join in training and exposure to different section up close

and other information. Thus, I have experienced how to present and deal with different type of career in future.

My involvement in the work of upgrading, modifying, testing and controlling the system also included in this department. The designated “Inventory System” involves artificial intelligence applications for health-based Universiti Sains Malaysia (USM).

4.4 Limitations and Recommendations

Organization should provide enough device such as computers for trainee so that trainee can use the company device and does not have to bring their own computer. This will be unfortunate for trainee who does not have any laptop to bring. Thus, providing sufficient device would be the best way to improve productivities. Other than that, organization should allow the trainee to involve with more discussion, meetings or seminar that can be joined by trainee. This will give the trainee the exposure how industrial works. PPKT Health Campus should consider by giving the allowances to the trainee. This is because of the high cost living with there is no other space for student to make part time work as they must attending very packed training that has been provide to them. So that, the organizations should revise back this matter as to contented the trainee feeling and does not feel worry about the money needed to survive. The organizations also should reflect back by given allowances to trainee for overall duration of their internship.

University should provide shorter time for internship from 5 months to 3 months so that the student can find job earlier before the graduation. It is very great that university has provide the guidance and constant supervision to ensure the student excel in their training. The university should continue with internship program, this is because it helps to prepare the students for their careers in future and also enable the students to practice the theoretical

knowledge obtained during class be exercised practically. It also helps to develop students understanding of work ethics, employment demands, responsibilities and opportunities.

CONCLUSION

Overall, the industry training undertaken by students in their final semester is very especially for me. With industry training, it is a platform for me to get to know the real scope of work and wider. In addition, the knowledge acquired during studies at UiTM fully applied in the world of work. The difference in the current study in UiTM and practical training is widely divergent, especially how to communicate with the outside.

A more mature style of communication is something that I get to improve my communication skills. Therefore, this training was very good and should continue to produce graduates better quality in line with the government's intention to create dynamic professionals. During the industrial training PPKT Health Campus, a lot of knowledge and new experiences I had when I do work in the office. This knowledge and experience is useful to develop themselves and help to facilitate future.

I also have a lot exposed to various activities and tasks in this department are indirectly i also know every responsibility and role of each employee in the department. Exposure to the real working environment is good for the student especially to open their minds to be more creative and knowledgeable. Students can also identify and address the problems that often arise in a real work situation.

Even the many challenges that have been encountered by each student during the training varies from one industry to another, but what is important is that one should be more positive in the face of every situation so that the experience gained can be used in the future. Lastly, I express all my gratitude to all PPKT Health Campus staffs, from all level of the management for their support, cooperation, guidance and advice in order to help me finishing my practical training successfully. I hoped that in the future the valuable knowledge gained at PPKT Health Campus

will be able to provide a steady and good development in continuing to serve the community with pride.

REFERENCES

(2019). *Diagram.IO*. Retrieved from: <https://www.draw.io/>

APPENDICES

APPENDICES 1:
PHOTOCOPY LOG
BOOK

DATE : 1/8/2018 *Arba*

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
8.10 am - Daftar diri di Jabatan Pendaftaran	
10.00 am - Daftar diri di Jabatan Pengambilan Konsultasi & Teknologi Kampus Keahliatan.	
2.30 - Jumpa Sr. Pn Zamilah Hussin - bincang ttg bveview special project. kenal diri dan belian.	<i>gof</i>

DATE: 2/8/18 Khamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
9.00 am - mengenali persekitaran kerja di organisasi.	
10.00 - membuat tinjauan ttg sistem yg diguna pakai oleh USM	/s/

DATE: 5/8/18 / Ahad

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
10:00 am - berbincang dengan SV tentang projek praktikal.	
11:00 p	
3:40 pm - SV menetapkan utk buat sistem by projek praktikal - sistem pengurusan staf pusat.	/s/



DATE: 29/8/18 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
menyertai latihan mengenai Code Insiter bersama en Mazzi.	
En Mazzi memberi penerangan serta sedikit ttg CI bagaimana ia dpt memudahkan kerja pembangunan sistem.	Z
Latihan ini berakhir pd pukul 4.30pm. Semasa latihan En Mazzi memberi contoh membuat sistem pendetturan pesakit.	Zamila
ZAMILAH BINTI HUSSIN PEGAWAI TEKNOLOGI MAKLUMAT F42 Pusat Pengetahuan, Komunikasi & Teknologi Kampus Kesihatan, Universiti Sains Malaysia 16150 Kubang Kerian, Kelantan	

DATE: 28/8/18 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
En. Mik membuat perjumpaan dgn pelajar ² praktikal utk mengetahui progress praktikal di sini -	
Seorang pelajar praktikal membuat presentation by special project kpd En Mik.	ZJ

DATE: 27/8/2018 Isnin

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Pn Zamilah memberitahu kami ttg Special project yg bakal dibuat oleh sy.	
Pn Zamilah mengarahkan sy utk membuat Modul Penerimaan dan telah diberi tempoh sepanjang 2bln.	[Signature]
Sistem tersebut batch menyimpan data, display and dan batch print.	
Pn juga memberitahu list barangan yg perlu dimasukkan di dalam system.	

DATE: 16/8/18 Khamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
mencari contoh sistem pengurusan stor di internet	
	/
mengetahui bagaimana sistem pengurusan stor berfungsi	


DATE: 14/8/18 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Pn Zamirah Normawati menyerahkan kad pelajar praktikal.	
memahami sistem pengurusan stor dlm slide yg diberikan oleh Pn Zamirah	Df.
mencari dlm internet ttg cara merkod kad kawalan dan kad petak.	

DATE: 13/8/18 | SVO

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
tergi mengambil kad pelajar praktikal di Bangun Pendaftaran dan menyerahkan kepada pn Kurniawati utk dibuat bar code bg tujuan ^{Scan} kehadiran.	JH
memahami mengetahui maklumat tentang sistem pengurusan stor yg di ^{di} perit dibentangkan oleh pn Zamilah	

DATE: 8/8/2015 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
<p>10:00 En Normawati mengarahkan saya untuk 10:00 - memindahkan telefon pejabat yang tidak digunakan untuk di luputkan. Telefon tersebut dimasukkan ke dalam kotak dan perlu diserahkan kepada En. Azmi.</p>	
<p>11:30 - En. Nashrudin mengajak ku^{saya} utk pergi ke bilik PABX iaitu bilik server utk telefon pejabat USM & Husm. En Nashrudin menceritakan kepada sy bagaimana bilik PABX berfungsi dan bilik PABX itu^{tertu} berjalan 24/7.</p>	

DATE: 7/8/18 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
mencari maklumat dlm internet berkaitan	
penggunaan stor perat yang baik!	Jus
menjal special project	

DATE: 30/9/18 Ahad

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
menyusun page Product page utk admin.	
menyusun product product page, ada search button,	
back button, add button dan list produk.	77
List produk boleh li edit utk dipadam atau	
diubah suai.	

DATE: 27/9/18 Khamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat menu utk user dimana berlainan dgn menu admin.	
	94

DATE: 24/9/18 Isnin

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat page utk senarai utk barang material	21
membuat page utk senarai barang expired.	

DATE: 15/9/18 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat sambungan 'index page' register page	
membuat 'tambah ada' korangan page	SA

DATE : 1/9/18 Isnin

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat ^{index page} login dan register page	
mencipta database utk sistem pengurusan Flor modul penerimaan.	H

DATE: ~~10/3/18~~ /18 Kharis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Belajar coding melalui website w3schools	
mencari template yg boleh digunakan di dm sistem ini.	A

A
ZAMILAH RINTI HUSSIN
PEGAWAI TEKNOLOGI MAKLUMAT P45
Pusat Pengetahuan, Komunikasi & Teknologi
Kampus Kesihatan, Universiti Sains Malaysia
16150 Kubang Kerian, Kelantan

DATE: 12/9/2018 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Berpindah ke tempat baharu, tempat kerja utk pelajar praktikal sbb ingin mengasingkan tempat pelajar sistem dgn pljar hardware.	✗



DATE: 10/9/13 (Sun)

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Membuat storyboard tly sistem bagian penerimaan. membuat ker. layout kasar.	A
membuat erd, dtd sistem berkenaan.	

DATE: 5/9/2018 Lab

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat tagetern surfing dan browser yg php language utk lebih mudah dan bealici	A

DATE: 4/9/18 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat analisa utk membuat sistem . .	
membuat perbandingan dgn sistem yg sedia ada . sth : tree knowledgebase treasury	✓

AA
ZAMILAH BINTI HUSSIN
PEGAWAI TEKNOLOGI MAKLUMAT F43
Pusat Pengetahuan, Komunikasi & Teknologi
Kampus Kesihatan, Universiti Sains Malaysia
16150 Kubang Kenan, Kelantan

DATE: 3/9/18 Isnin

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Enik Zulkifli mepelawa kami utn	
belajar format pc staff yang baru	
sampai	/
Sebanyak 3 pc telah dihantar utk di baik pulih.	

DATE 2/9/2018 Ahad

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Belajar format pc staff hospital bersama enik Zulkifli sebanyak 4 biji komputer	ZJ
Beliau juga memberitahu bagaimana cara nak jaga pc.	

DATE: 31/10/18 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat table nte produk dimana	
memiliki colum Item code, Item name,	Zg
category, supplier, Date received, Expiry date,	
Quantity left.	

DATE : 30/10/18 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
- menyelesaikan error di product page dgn meminta bantuan pelajar praktikal lain.	Jg
- Data product dapat dimasukkan.	

DATE: 28/10/18 Ahad

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
mendengar taklimat daripada En Marwan	
Shah selaku pegawai IT dari Unit Web	79
Multimedia dan E-learning dan Beliau ^{mencatatkan} _{nya}	
sedikit sebanyak tly Unit tersebut.	

DATE: 25/10/18 *Hamis*

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
mendengar taklimat dari unit sokongan	
teknikal y diberikan oleh En Azhari	
Omar. Beliau menceritakan sedikit sebanyak	
tentang unit berkenaan serta menceritakan	
lokus access door dimana mereka	27
membaiki access door di situasinya,	
En Solahasi bin Abd Aziz menceritakan	
seper sedikit tentang Unit Telekomunikasi	

ZAMILAH BINTI HUSSIN
 PEGAWAI TEKNOLOGI MAKLUMAT
 Pusat Pengetahuan, Komunikasi & Teknologi
 Kampus Kesihatan, Universiti Sains Malaysia
 16150 Kubang Kerian, Kelantan

DATE: 24/10/18 Paku

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Mendengar taklimat daripada Wan Maizon.	
Beliau menceritakan bagaimana pihak USM ingin	
mengetahui lebih dan ttg Enterprise Architecture	
dan beliau juga menceritakan sedikit sebanyak	99
ttg EA.	
Selanjutnya, taklimat tentang Data Center.	
Husni mempunyai 119 server sendiri dan	
dijaga oleh 4 org staff unit pusat data.	
Selanjutnya, beliau membawa kami ke bilik	
Server	

DATE: 23/10/18 Jilasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Mendengar taklimat daripada En Darimi Jari	
Unit Network. Unit ini bertindok menjaga semua	
network yg ada di UTM. di HUSM. Belian	A
juga menceritakan sedikit sebanyak tentang	
Unit Network.	

DATE: 22/10/18 Isnin

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Ivan Zamilah memberitahu memberitahu sy utk bersjups by mam melihat mam progress sistem.	A

DATE: 31/10/18 AhaD

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
memasukkan data produk utk melihat	
siapa jika ada ada terdapat error.	#
mencari di internet ^{penca} error yg masih lg terjadi.	

DATE: 18/10/18 Khamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat kenas ini design menu utama ^{system} jpt supaya lebih cantik.	99
ZAMILAH BINTI HUSSIN PEGAWAI TEKNOLOGI MAKLUMAT E41, Pusat Pengetahuan, Komunikasi & Teknologi Kampus Kesihatan, Universiti Sains Malaysia 16150 Kubang Kerian, Kelantan	



DATE: 11/10/18 Klamis


EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat satu data database yang sama dan boleh digunakan oleh Modul Pengeluaran yang dibuat oleh Hilmi.	H
UNIVERSITI TEKNOLOGI MARA Kampus: Kubang Kerian, Kelantan	UNIVERSITI TEKNOLOGI MARA Kampus: Kubang Kerian, Kelantan

DATE: 9/10/18 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat user page utk memberi access	
kepada sistem. Dgn adanya user page, sistem	
menjadi lebih selamat disebabkan hanya	79
• user terdaftar shj boleh access. Page user	
tidak sama dgn page admin.	

DATE 2/10/18

Selasa
~~Senin~~

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat page categories utk produk yang akan dimarktar - membuat button add categories	

DATE: 1/10/18 ^{15min} ~~1hr~~

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
memcaai error g ade pd product page masu utk user.	
	H

DATE: 22/11/18 Khamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Meningkatkan bantuan ada dengan Shahimi utk membantu memperbaiki error sistem setelah digalangkannya	99

ZAMILAH BINTI HUSSIN
PEGAWAI TEKNOLOGI MAKLUMAT P434
Pusat Penyelidikan, Komunikasi & Teknologi
Kampus, Universiti Sains Malaysia
78100 Kuala Kubu Bharu, Selangor

DATE : 25/11/18 Ahad

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
Staff Access Door mengajak kami utk belajar bagaimana Access Door berfungsi dan bagaimana nak buat.	84
kebanyakan Access Door byk rosak di Hospital.	



DATE: 15/10/18 hamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
20 ZM dari Unit Klinik PK meminta tolong bar	97
sy dan kwn praktikal lain utk membantunya	
jimat pk staff hospital sebanyak 20bji	

DATE: 7/11/15 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
menambah button edit & delete button	
pl page supplier	92
membaiki error pd button delete & edit	

DATE: 1/11/18 Khanis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
mengupdate table produk dgn menambah button edit dan delete.	JH
ZAMILAH BINTI HUSSIN PEGAWAI TEKNOLOGI MAKLUMAT F4D Pusat Pengetahuan, Komunikasi & Teknologi Kampus, Universiti Sains Malaysia 10150 Kubang Keratan, Kelantan	

DATE: 27/12/2018 khamis

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
menyusun HOD menyusun pelajar praktikal menghadiri sesi briefing mengenai Gitlab di dlm bilik drawing.	27

DATE: 26/12/2018 Rabu

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
membuat presentation pd bentuk kelas Jabatan PPKT yaitu Hj NIK dan di depan pelajar praktikal hin.	J
Presentation selama 30 minit dan beserta Q and A.	

DATE: 19/2/2018 *Deba*

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
mengikuti training yang dibuat oleh En Nazri tentang framework : Code Lynitor di dlm bilik training.	<i>79</i>
Training ini adalah bahagian kedua.	

DATE : 12/12/2018 Selasa

EXTRACT NATURE OF WORK DONE	SUPERVISOR REMARKS
En Zul mengajak sy utk memasang beberapa sistem ke dlm laptop yg telah diformat olehnya sebanyak 5 biji. sistem tersebut boleh di download melalui server IT USM.	Z

APPENDICES 2:

PHOTOCOPY

ATTENDANCE

Lampiran

**LAPORAN KEHADIRAN PELAJAR LATIHAN INDUSTRI
PUSAT PENGETAHUAN, KOMUNIKASI DAN TEKNOLOGI (PPKT)
KAMPUS KESIHATAN, UNIVERSITI SAINS MALAYSIA**

NAMA: Muhammad Firdaus Bin Wahid

NO PENGENALAN: 950824-08-5721

StatusIN	StatusOUT
15/08/2018 8:08	15/08/2018 17:01
16/08/2018 8:11	16/08/2018 16:43
19/08/2018 8:08	19/08/2018 17:00
20/08/2018 8:07	20/08/2018 16:59
21/08/2018 8:09	21/08/2018 13:02
26/08/2018 8:14	26/08/2018 16:58
27/08/2018 7:59	27/08/2018 16:58
28/08/2018 8:01	
29/08/2018 8:04	29/08/2018 16:56
30/08/2018 8:01	30/08/2018 16:41
02/09/2018 8:07	02/09/2018 16:57
03/09/2018 8:08	03/09/2018 16:58
04/09/2018 8:12	04/09/2018 16:59
05/09/2018 8:13	05/09/2018 16:58
10/09/2018 8:15	10/09/2018 16:58
12/09/2018 8:12	12/09/2018 16:58
13/09/2018 8:14	13/09/2018 16:46
17/09/2018 8:08	17/09/2018 17:00
19/09/2018 8:10	19/09/2018 16:58
20/09/2018 8:11	20/09/2018 16:41
23/09/2018 8:16	23/09/2018 16:57
24/09/2018 8:11	24/09/2018 16:57
25/09/2018 8:16	25/09/2018 17:00
26/09/2018 8:15	26/09/2018 16:57
27/09/2018 8:13	27/09/2018 16:45
30/09/2018 8:13	30/09/2018 17:01
01/10/2018 7:59	01/10/2018 17:00
02/10/2018 8:13	02/10/2018 16:58
03/10/2018 8:12	03/10/2018 16:58
04/10/2018 8:12	04/10/2018 16:42
08/10/2018 8:12	08/10/2018 17:00
09/10/2018 8:13	09/10/2018 17:00
10/10/2018 8:13	10/10/2018 16:58
11/10/2018 8:19	11/10/2018 16:43
14/10/2018 8:48	14/10/2018 16:57
15/10/2018 8:14	15/10/2018 16:58
16/10/2018 8:09	16/10/2018 16:57
17/10/2018 8:08	17/10/2018 16:58

18/10/2018 8:05	18/10/2018 16:43
21/10/2018 8:08	21/10/2018 16:57
22/10/2018 8:09	22/10/2018 16:57
23/10/2018 8:10	23/10/2018 16:58
24/10/2018 8:12	24/10/2018 16:59
25/10/2018 8:15	25/10/2018 16:45
28/10/2018 8:13	28/10/2018 16:58
29/10/2018 8:12	29/10/2018 16:57
30/10/2018 8:22	30/10/2018 16:58
31/10/2018 8:12	

Nota :

Sistem tidak dapat menyediakan rekod kehadiran pelajar berkaitan dari 2 November sehingga 31/12/2018 kerana masalah teknikal.

**APENDICES 3:
SENARAI NAMA
BARANG STOR
GUNA HABIS PPSK**

Senarai Barang Stor Guna Habis PPSK

Untuk kategori Barang Makmal, Glassware dan Expired Date sahaja

Bil.	Nama Jenerik	Jenama	Spesifikasi	No. Kod Item/Saiz
1	Alcohol Swab	Hospitech	Paper+70% alcohol	50 g/m ² thin type
2	Aplicator stik		Wooden	
3	Autoclave tape	HmBG	Cellotape	19mm x 50m
4	A 4 Sticker		Paper	
5	A 4 Laminating Film	Astar	Plastik	220 x 307mm
6	A 3 Laminating Film	Astar CBE	Plastik Plastik	303 x 426mm 307 x 432mm
7	Aluminium foil	Diamond	Aluminium	7.6m x 30.4cm (25 SQ.FT) 7.6m x 45cm (37.5 SQ.FT)
8	Biohazard plastic bag	Radicare	Plastic – yellow	100 L
9	Biohazard plastic bag	Radicare	Plastic - yellow	30 L
10	Benchote reel	Whatman	Paper	46 cm x 50 mm
11	Cotton wool roll	Idealcare	Paper	500 grams
12	Cover slip/glass cover	Favorit	Glass	24 x 50mm
13	Cover slip/glass cover Cover slip/glass cover	HmBG Sail Brand	Glass Glass	22 x 22mm 22 x 22mm
14	Collection swab	Citoswab	Wooden application stick	
15	Centrifuge tube 15ml	Biologix	Plastic	15 mL
16	Centrifuge tube 50ml		Plastic	30 x 115mm
17	Cellulose nitrate filter 0.45 µm (sterile)	Sartorius	Filter paper	
18	Cellulose Extraction Thimbles	Favorit	Paper	ID 43mm ED 123mm
19	Cellulose Extraction Thimbles	Favorit	Paper	ID 33mm ED 80mm
20	Apron plastic putih		Disposable HDPE PVC apron	800mm/1400mm x 0.02mm
21	Filter papers	Smith	Paper	240 mm
22	Filter papers	Whatman chm	Paper Paper	55mm 55mm

23	Filter papers	Smith	Paper	150mm
24	Filter papers	Smith	Paper	110mm
25	Gauze roll	Panax	Cloth	36 '' x 100 YDS
26	Gauze sponges	Snowflake		19 x 15
27	Glove S (Non sterile)	CleanGuard	Rubber	Size S
28	Glove M (Non sterile)	CleanGuard KleenGuard	Rubber Rubber	Size M Size M
29	Glove L (Non sterile)	CleanGuard	Rubber	Size L
30	Glove S (Nitrile)	3 R	Rubber	Size S
31	Glove M (Nitrile)	3 R	Rubber	Size M
32	Glove L (Nitrile)	3 R	Rubber	Size L
33	Lens paper	Kimtech Science Brand	Paper	
34	Microscope slides	Sail Brand	Glass	25.4 x 76.2mm
35	Micro haematocrit tubes	Vitrex	Glass	
36	Needle 21G x ½''	BD		0.8mm x 38mm
37	Needle 25G x 1''	Terumo		0.5 x 25mm
38	Needle 26G x ½ ''	Terumo		0.45 x 13mm
39	Paper hand towel			
40	Parafilm	Bemis	Cellotape	4 IN. x 125 FT. ROLL
41	Petri disk	Brandon	Plastic	90 x 15mm
42	PCR Tubes 0.2 ml	Odonixx Labware	Plastic	0.2 ml
43	PCR Tubes 0.5 ml	Biological Brand	Plastic	0.5 ml
44	PCR Tubes 1.5 ml		Plastic	1.5 ml
45	Pipette tips 0,5-10 µL	Gilson	Plastic	0,5 – 10 µL
46	Pipette tips 20-200µL	Biologix	Plastic	20 - 200µL
47	Pipette tips 1 - 1000µL	Axygen	Plastic	1 - 1000µL
48	Pipette tips 5 L	Axygen	Plastic	5 L
49	Pasteur pipette 1 ml		Plastic	1 ml
50	Pasteur pipette 3 ml		Plastic	3 ml
51	Surgical Face Mask	Medicos	Cloth (tie-on)	
52	Syringe filter 0.45 µm	Bioflow	Cellulose nitrate (sterile)	0.45 µm
53	Syringe filter 0.45 µm	Sartorius	Cellulose acetate (sterile)	0.45 µm
54	Syringe filter 0.2 µm	Sartorius	Cellulose acetate (sterile)	0.2 µm
55	Sharp bin 2.5 L	Radicare	Plastic	2.5 L

56	Sharp bin 5 L	Radicare	Plastic	5 L
57	Sharp bin 10 L	Radicare	Plastic	10 L
58	Syringe without needle 1ml/cc	Iringe	Plastic – Luer Slip Centre, Sterile	1 MI /cc
59	Syringe without needle 3ml/cc	Iringe	Plastic – Luer Lock Centre, Sterile	3 mL/cc
60	Syringe without needle 5ml/cc	Terumo	Plastic – Luer Lock Centre, Sterile	5ml/cc
61	Syringe without needle 10ml/cc	Terumo	Plastic – Luer Lock Centre, Sterile	10 ml/cc
62	Syringe without needle 10ml/cc	Iringe	Plastic – Luer Lock Centre, Sterile	20 ml/cc
63	Thimble filter	Advantec	Paper	ID 36mm OD 40mm L150mm
64	Tisu roll	Cutie soft	Paper	
65	TLC Silica Gel Plate GF 254	Smith	Glass Plate	20 x 20cm @ 200 x 200mm
66	TLC Plate Silica Gel 60	Merck	Glass Plate	20 x 20 cm
67	TLC Silica Gel 60 F254	Merck	Aluminium	20 x 20 cm
68	TLC Sprayer Kit	Analtech		
69	Kertas A 4	Sohop Gold Supreme	Paper	
70	Urine container		Plastic - Sterile	60 ml
71	Weighing boat tray		Plastic	41 x 41 mm
72	Weighing boat tray		Plastic	89 x 89 mm
73	Weighing boat tray		Plastic	140 x 140 mm
74	Wooden Tounge Despressor		Wooden	
75	Biohazard plastic bag	Radicare	Plastic - yellow	5 L
76	Glass Pasteur pipette bulb (black)		Rubber	
77	Water distill bottle	Nalgene	Plastic	10 L
78	Water distill bottle	Nalgene	Plastic	20 L
79	Togoshi counter	Trademark		
80	Reagent bottle	Boxon	Glass	100 mL
81	Reagent bottle	Boxon	Glass	250 mL
82	Volumetric flask	Schoot duran	Glass	500 mL
83	Volumetric flask	Schott duran	Glass	250 mL
84	Pipette tips box	GEB Greiner Bio-one	Plastic Plastic	1000 µL 1000 µL
85	Pipette tips box	Greiner Bio-one GEB Eppendorf	Plastic Plastic Plastic	10 µL 10 µL 10 µL

86	Centrifuge tube rack	Simport	Plastic	1.5 MI
87	Pipette tips box	Universal	Plastic	200 µL
88	Pipette tips box	Eppendorf	Plastic	100 µL
89	Pipette tips box	Eppendorf	Plastic	20 µL
90	Isopack -21 °C + Isorack	Eppendorf	Plastic	0.5 mL
91	Cryogenic vial	Corning	Plastic	2.0 mL
92	Combitips plus	Eppendorf	Plastic	5 mL
93	Isotherm system,starter set	Eppendorf	Plastic	1.5/2.0 mL
94	Desk lamp with base	DL-107		
95	Flexible arm light	Fisherb		
96	Swing arm lamp Swing arm lamp	Euro Master		
97	Wash bottle		Plastic	
98	Goggles, perforated	North	Plastic	
99	Hair dryer	Philips	Plastic	
100	Goggles	Encon	Plastic	
101	Jam randik	Smith		
102	Blood tube rotor	Thermo IEC	Plastic	
103	Filter air			
104	Vacutainer green		Plastic	5 mL
105	Vacutainer yellow		Plastic	
106	Vacutainer green		Plastic	3 mL
107	Vacutaine red		Plastic	
108	Vacutainer blue		Plastic	
109	Vacutainer purple		Plastic	
110	Blood container pink		Plastic	
111	Blood tube	BD	Plastic-EDTA	10 mL
112	Basic isolation gown with elastic band	Medicos		30 gsm
113	Urine container		Plastic	60 mL
114	Dispenser bottle		Plastic	500 mL
115	N 95 Particulate respirator			
116	96 Well Suspension Culture Plate			
117	Aspirator bottle			10 L
118	Centrifuge tube	Biologix	Plastic-sterile,Polypropylene,Non ayrogenic	50 mL

119	Microtitre 96 well plate	Biologix	Plastic-Sterile,Non pyrogenic,Non cytotoxic	
120	Cell culture flasks	Cell star	Plastic,filter screw cap red,clear,sterile	50 mL (25cm ²)
121	Conical tube	SPL Life Sciences	Plastic,Sterile,Non pyrogenic	15 mL
122	Acrodisc Syringe Filters	PAAL CORPORATION	Non pyrogenic	25 mm
123	Serological pipette	Cellstar	Sterile	10 mL in 1/10mL
124	Microtip (Pipette tips)	Tarson's	Plastic-Bevelled yellow	200 mL
125	Microtip (Pipette tips)	Tarson's	Plastic	10 µL
126	Cell culture flask	Crystal Grade Polysterene	Plastic.Sterilized,Non pyrogenic	
127	Microtitre 96 well plate		Plastic-Flat bottom	
128	Blue tips	Axygen scientific	Plastic	1-1000µL
129	Yellow tips	Axygen scientific Greiner Bio-ONE	Plastic Plastic	1-200µL
130	White tips	Axygen scientific	Plastic	0.5 – 10 µL
131	Single PCR Tubes	Axygen scientific	Plastic	0.2 mL
132	8-strip PCR Tubes/cap	Axygen scientific	Plastic	0.2 mL
133	Microtubes	Axygen scientific	Plastic	1.5 mL
134	Multi-Fold Towel	Scoot brand		
135	Kimwipes	Kimtech Science Brand	Paper	
135	Glove	Ansell TouncNTuff	Rubber	Small (S)
136	Glove	Ansell TouncNTuff	Rubber	Medium (M)
137	Glove	Ansell TouncNTuff	Rubber	Large (L)
138	Falcon Tubes	BD Falcon	Plastic	15 mL
139	Falcon Tubes	BD Falcon	Plastic	50 mL
140	Buccal Swab			
141	Pamplet Unit HID/DNA			
142	Letterhead Unit HID/DNA			
143	Watermark paper Unit HID/DNA			
144	FACS Tube	Falcon	Plastic-Polystyrene round-bottom tube	5 mL, 12x75mm
145	Centrifuge tube	Axygen	Plastic-screw cap, pre-sterilized	15 mL
146	Well plate	TPP	Plastic-sterile with lid	24-well plate
147	Centrifuge tube	China	Plastic-screw cap, sterile	15 mL
148	Parafilm	Bemis		4 inch x 125 ft.Roll

149	Glove	Hang Care	Rubber-powder free, Latex	Large (L)
150	Centrifuge tube	Falcon	Plastic-screw cap, pre-sterilized	50 mL
151	Cell Culture Flask	TPP	Plastic-filter, screw cap, sterile, vent	75 cm ²
152	Well-plate	HmBG	Plastic-flat bottom with lid, sterile	96-well
153	Clear tips Bulk	Axygen, USA	Plastic	0.5-10 µL
154	Glove		Rubber-latex examination glove, powder free	XL
155	Stericup membrane filter for media	Merck		
156	96 well plate		No pinch bar, separate LID	96-WELL PLATE
157	48 well plate	Nunc	Single wrap	48-well plate
158	Tube flow		Single wrapped	2 mL
159	Urine container		Plastic-yellow cap	
160	Tips box	Axygen	Plastic	0.5-10 µL
161	Tips box	Axygen	Plastic	100-200 µL
162	Tissue culture flask	SPL	Sterile, filter cap	25 cm ²
163	Tubes with rack	Nest	Plastic-sterile	50 mL
164	Clear tips	Axygen	Plastic-sterile, bulk	0.5-10 µL
165	Yellow tips	Axygen	Plastic-sterile, bulk	100-200 µL
166	Tube	Biologix	Plastic-sterile	15 mL
167	Well plate		Plastic-no pinch bar, separate plate and LID	96-well plate
168	Petri dish			
169	Conical tube	Blue Mex™ (Falcon)	Plastic-disposable, polypropylene	50 mL
170	Round-bottom tube	BD Falcon	Plastic-polytyrene	5 mL-12 x 75 mm
171	Parafilm		Pachiney plastic packaging, disposable	4 inchi x 125" roll
172	Cell culture plate	Cellstar, greiner Bio-One	Plastic-sterile, F-bottom with lid	96-well
173	Tissue culture test plate 96F	TPP		96-well plate
174	Tissue culture flask 25	TPP	Plastic-filter screw cap, sterile	40 mL
175	96-well plate	Costar	Plastic-flat bottom with lid	96-well plate
176	Blue pipette tips	Axygen scientific	Plastic-disposable	1-1000 µL
177	Stericup	Milipone corporation		1000 µL
178	96-well plate	Lotto	Plastic-flat bottom	96-well plate

179	Nelgene filtration products	Thermo Scientific	Rapid flow 75mm filter unit presterilized	500 MI
180	96 well plate cover	Lotto	Plastic-disposable	96-well plate
181	Syringe	BD	Plastic-luek lok™ without needle, latexfree	10 mL
182	Tissue culture flask 75	TPP	Plastic-vent screw cap	150 mL
183	White tips	Fisher scientific	Plastic-virgin polypropylene, non sterile	0.2-10 µL
184	Glass beaker	Schoot duran	Glaswere	1000 mL
185	Measuring cylinder	Simax, Czech republik	Glasswere	1000 mL
186	Printer (broken)	Canon Ip 1880	Inkjet printer	
187	Printer (broken)	HP Desjet Ink Advantage 2515	Inkjet printer	
188	TLC Silica gel 60 F254	Merck	TLC Glass plate	
189	TLC Silica gel 60 F254	Merck	TLC Aluminium paper	25 cm x 25 cm
190	Biotage sphene for solid	ZIP	Phase Extraction (SPE)	
191	Vacuum glass column chromatography with sintered disc	Favorit		Length 600 mm Diameter 40 mm
192	Vacuum glass column chromatography with sintered disc	Favorit		Length 600 mm Diameter 20 mm
193	Cassettes	Unknown		
194	Syringe	Cellotron	Plastic	10 mL
195	Syringe	Cellotron	Plastic	3 mL
196	Syringe tuberculin	Terumo	Plastic	1 cc/mL
197	Syringe	BD	Plastic	10 mL
198	Needle	Cellotron	Plastic-hypodermic	23 G x 1 ½
199	Needle	Terumo	Plastic-	27 G x ½
200	Plain blood tubes	Golden Vac	Plastic	5 mL
201	Urine container	Unknown	Plastic-red cap	60 mL
202	Reagent reservoir	Eppendorf		
203	Clear tips	Greiner Bio	Plastic	1000mL
204	Yellow tips	Greiner Bio	Plastic	100 mL
205	Pasteur pipette	GS	Plastic	3 mL
206	Elisa Plate	JET Biofel		
207	Cell culture flask	NEST	Plastic	75 cm ²
208	Filter top	TPP	Sterile	0.22 µm, 500 mL
209	Centrifuge tube	NEST	Plastic	50 mL
210	Centrifuge tube	NEST	Plastic	15 mL

211	Flowcytometry tube	BD Falcon		
212	Serological pipette	SPL Life Sciences		10 mL
213	Serological pipette	SPL Life Sciences	Disposable,sterilized	2 mL
214	Serological pipette	SPL Life Sciences		5 mL
215	Centrifuge tubes	Falcon	Disposable,sterilized	15 mL
216	Flask T25	Falcon	Plastic-blue vented cap	50 mL
217	Pipette tips	Watson	Plastic	10 mL
218	Pipette tips	Watson	Plastic	1000 µl
219	Cotton wool		Cotton	400 gm/pk
220	Tissue culture flask	TPP	Plastic-vent screw cap	75 cm ²
221	Sharp container		Plastic-cap yellow	3 L
222	Pipette tips	Quality Scientific Plastics	Plastic	10 µl
223	Nalgene Rapid Flow Filters	Thermo Scientific	Plastic	500 mL,0.45 µm,PES 75 mm DIA.Membrane
224	96-well polystyrene microplates	Greiner Bio-one	Plastic-V-Bottom,solid	
225	Cell culture flask T75	SPL	Plastic-sterilized	
226	Serological pipette	SPL	Sterilized,disposable	1 MI
227	Glove	Ironskin	Rubber-powder free latex	Size S
228	Glove	Ironskin	Rubber-powder free latex	Size M
229	25 cm ² tissue culture flask w/filter cap	Biologix		25 cm ²
230	2.0 ml self-standing cryogenic vials	Biologix		2.0 mL
231	Syringe	Terumo	Plastic-Luer lock	50 mL
232	Microstar universal-fit blue pipet tips	Golden gate biosciences	Plastic-Bull pack non-sterile	100-1000µL
233	Microstar universal-fit pipet tips	Golden gate biosciences	Plastic-10 MI short tips in-self-standing bulk pack	0.1-10 µL
234	Microcentrifuge tube	Golden gate biosciences	Plastic-with snap cap	1.7 ml in self-standing bag
235	Microstar universal-fit yellow pipet tips	Golden gate biosciences	Plastic-bulk packed,non-sterile	1-200 µL
236	Universal-fit blue tips	Plastilab (Lebanon)	Plastic	100-1000 µL
237	Tube		Plastic-polypropylene round bottom	14 mL
238	Serological pipette	BD Falcon	Plastic	25 mL

239	Tissue culture,96 well plate with lids	NEST		96-well plate
240	Tissue culture,6 well plate with lids	NEST		6 well plate w/lids
241	Tissue culture,24 well plate with lids	NEST		24 well plate with lids
242	Topo Shotgun Kit	Invitrogen		
243	Nebulizer Kit	Invitrogen		
244	Petri disk	Labsern	Plastic-disposable	90 x 15 mm
245	PCR Sv Mini	Gene all Korea		
246	Clear microtubes	Axygen,USA	Plastic	1.5 mL
247	Yellow tips	Axygen,USA	Plastic-bulk	1-200 µL
248	75 cm ² tissue culture flask w/filter cap	SPL Life Sciences	Plastic	75 cm ²
249	25 cm ² tissue culture flask w/filter cap	SPL Life Sciences	Plastic	25 cm ²
250	Serological pipette	SPL Life Sciences	Plastic	10 mL
251	Serological pipette	SPL Life Sciences	Plastic	5 mL
252	Reservoir	SPL Life Sciences		50 mL
253	Microcentrifuge tube	SPL Life Sciences	Plastic-conical	50 mL
254	Cryovial external cap	SPL Life Sciences	Plastic	1.8 mL
255	Petri disk	SPL Life Sciences	Plastic-disposable	90 x 15 mm
256	Laboratory bottle	Schott,Duran	Glasswere	500 mL
257	Laboratory bottle	Schoot,Duran	Glasswere	250 mL
258	Laboratory bottle	Schott,Duran	Glasswere	100 mL
259	Universal bottle		Glasswere	
260	Boufant cap			
261	Face mask industrial use			
262	Centrifuge tube	Biologix,USA	Plastic-disposable	15 mL
263	Centrifuge tube	Biologix,USA	Plastic-disposable	50 mL
264	6-well multiwall culture plate	Biologix,USA	Plastic	6-well
265	Tubes rack,40 well	Biologix,USA	Plastic-	15 mL
266	Tubes rack,25 well	Biologix,USA	Plastic	50 mL
267	Cryogenics storage box	Biologix,USA	Plastic-Assorted colors,81-well	81-well
268	Cryogenics storage box	Biologix,USA	Plastic-Assorted colors,100-well	100-well
269	Clickseal microfuge tubes	Golden Gate Bioscience (GGB)	Plastic-snap cap	2.0 mL

270	Microflex thin wall PCR	Golden Gate Bioscience (GGB)	Plastic-single tubes	0.2 mL
271	Micropipet tips	Golden Gate Bioscience (GGB)	Plastic-microstar universal fit-G-STYL	10 µL
272	Yellow tips	Golden Gate Bioscience (GGB)	Plastic	200 µL
273	PCR Tube storage racks	LABCON	Plastic-assorted colour	96-place
274	Racks microtubes for 0.5/1.5/2.0	LABCON	Plastic-assorted colour	96-place
275	Blue pipet tips	Golden Gate Bioscience (GGB)	Plastic-non sterile	100-1000 µL
276	Reagent resevoirs	Biologix,USA	Plastic-Assorted colours bulk pack	55 mL
277	Glove	Ironskin Malaysia	Rubber-powder free Nitrile	9" size S
278	Glove	Ironskin Malaysia	Rubber-powder-free latex	9" size S
279	96-well culture plate	SPL Life Sciences	Plastic-sterile	96-well
280	Serological pipette	SPL Life Sciences	Glasswere-orange plug,sterile	10 mL
281	25cm Tissue culture flask	SPL Life Sciences	Plastic-with filter cap,sterile	25cm
282	Multiwell culture plate	SPL Life Sciences	Plastic	24-well
283	Cell scraper	SPL Life Sciences		Length 230 mm
284	Blade wide	SPL Life Sciences		13 mm,sterile
285	75cm Tissue culture flask	SPL Life Sciences	Plastic-with filter cap	75cm
286	Petri disk	BION	Plastic	90 mm
287	Petri disk	Greiner bio-one	Plastic	60 mm
288	Pipette tips		Plastic	1000 µL
289	Pipette tips	TARSONS	Plastic	10 µL
290	Microcentrifuge tube	TARSONS	Plastic	1.5 mL
291	Microcentrifuge tube		Plastic	2.0 mL
292	White pipette tips	Labcon	Plastic	100-1250 µL
293	24-well tissue culture test plate	SPL Life Sciences	Plastic	24-well
294	Centrifuge tube	BD Falcon	Plastic	50 mL
295	Centrifuge tube		Plastic-with polystyrene rack,conical,sterile	50 mL
296	Cryovial	SPL Life Sciences	Plastic	1.8 mL
297	Serological pipette	SPL Life Sciences	Glasswere-sterile	5 mL
298	White cap tubes			25mL
299	Centrifuge tube	SPL Life Sciences	Plastic	15 mL

300	Disposable syringe	Terumo,Japan	Plastic-Luer lock tip without needle	10 cc/mL
301	6-well culture plate	SPL Life Sciences	Plastic	6-well
302	Microscope slide box		Plastic-100 slide capacity(blue)	
303	PCR tube storage box		Plastic-yellow/white	96-well
304	Cryogenic storage box			25-well
305	Cryogenic storage box		Plastic-black/green	50-well
306	Cryogenic storage box		Plastic-pink,orange &yellow	100-well
307	Cryogenic storage box		Plastic-transparent	100-well
308	Cryogenic storage box	Nalgene	Plastic	100-well
309	Conical flask	Biomex	Glasswere-narrow neck	250 mL
310	Conical flask	Biomex	Glasswere-narrow neck	500 mL
311	Conical flask	Biomex	Glasswere-narrow neck	1000mL
312	Specimen bottle	S.Murray		60 mL
313	Specimen bottle	S.Murray		120 mL
314	Filter funnel	Wheel	Glass	90 mm
315	Beaker	PYREX	Glass	100 mL
316	Beaker	Borosil	Glass	250 mL
317	Beaker	Schott-Duran	Glass	250 mL
318	Beaker	Pyrex	Glass	250 mL
319	Beaker	Pyrex	Glass	400 mL
320	Beaker	Pyrex	Glass	500 mL
321	Beaker	Borosil	Glass	600 mL
322	Lab glass bottle	Schott Duran	Glass	50 mL
323	Lab glass bottle	Schott Duran	Glass	100 mL
324	Lab glass bottle	Schott Duran	Glass	250 mL
325	Lab glass bottle	Simax	Glass	500 mL
326	Lab glass bottle	Schott Duran	Glass	500 mL
327	Lab glass bottle	Borosil	Glass	500 mL
328	Lab glass bottle,Amber	Simax	Glass	1000 mL
329	Lab glass bottle	Schott Duran	Glass	1000 mL
330	Petri disk	Brandon	Plastic-disposable	90 x 15 mL
331	Needle	SJ Needle	Plastic-disposable	23 G x 30 mm
332	Syringe	Terumo	Plastic-with needle,sterile	10 cc/mL
333	Microcentrifuge tube clear	Golden Gate Bioscience	Plastic-clickseal	1.7 mL
334	Conical bottom	Axygen scientific	Plastic-presterilized tube caps	15 mL

335	Conical bottom	Greiner Bio One	Plastic-blue screw cap,sterile	50 mL
336	Microcentrifuge tubes	Golden Gate Bioscience	Plastic-clear tube	0.65 mL
337	Pipette tips	Axygen scientific	Plastic-clear tips	0.5 – 10 µL
338	Yellow pipette tips	Axygen scientific	Plastic	1 – 200 µL
339	Blue tips	Universal Science Trading	Plastic	1000 µL
340	Yellow tips	Golden Gate Bioscience	Plastic-graduated,uni Fit Universal Fit Pipet Tips	200 µL
341	Tubes	Axygen	Plastic-thin wall,clear,flat cap	0.2 mL
342	Syringe	Terumo	Plastic-Luer lock w/out needle	5 cc/mL
343	Syringe	Terumo	Plastic-Luer lock w/out needle	10 cc/mL
344	Syringe	Terumo	Plastic-Luer lock w/out needle	50 mL
345	Glove	Ironskin	Rubber	Size M
346	Glove	Ironskin	Rubber	Size L
347	Aluminium tray			
348	Automatic processor compatible (APC)	Promega	Disposable	
349	Biohazard plastic		Plastic-blue color,autoclave disposable bag	
350	Blood collection set	BD Vacutainer	Plastic-disposable	23 G ¾"
351	Blood collection set	BD Vacutainer	Plastic-disposable	23 G ¾"
352	Blood collection set safety-lok with needle	BD Vacutainer	Plastic-disposable	23 G ¾"
353	Bottle filtration systems	Thermo scientific	Plastic-disposable,sterile	500 mL,0.2 pes
354	Casette for tissue embedding		Plastic-lid	45° angle
355	Cassettes for gel casting	Invitrogen	Plastic	1.5 mm
356	Centricon centrifugal filter devides	Milipore	Disposable	30 k MWCO
357	Centrifuge bottle PPCO	Thermo scientific	Plastic	250 mL
358	Chromatography paper	Whatman	Paper-disposable	12 x 14cm

359	Combs 10 well	Invitrogen	Plastic	1.5 mm,10 well
360	Cotton applicator 6"	Premier	Wood-sterile	6"
361	Cryobox 81 well		Plastic-lid	9 x 9
362	Cryobox 25 well	Nalgene	Plastic	25 well,1.2 mL
363	Discofix	Braun	Disposable-sterile	3SC
364	EIA/RIA plate	Costar	Disposable	96 well
365	F8 maxisorp loose	Nunc	Disposable	400 µL
366	Faeces container	Nice	Plastic-disposable	60 mL
367	Filter holder with receiver	Nalgene	Plastic-	47 mm,500 mL
368	Filter paper	Macherey nagel	Paper-disposable	12 x 12 cm
369	Filter paper	Whatman	Paper-disposable	125 mm
370	Filter paper	Whatman	Paper-disposable	24 mm
371	Flashback blood collection needle	BD Vacutainer	Plastic-with needle	23 G x 1"
372	Glass plate for SDS Page		Glass	Large
373	Beaker	Pyrex	Glass-borosilicate	100 mL
374	Beaker	Pyrex	Glass- borosilicate	50 mL
375	Petri dish	Pyrex	Glass- borosilicate	55 mm x 17 mm
376	Silinder glass			
377	Swing bucket rotor A-4-38	Eppendorf	Glass	4 x 85 mL, 4 x 90 mL
378	Hybond-C nitrocellulose	Amersham	Cellulose-disposable	0.45 micron
379	Hypodermic needle	Sterican	Plastic-with needle,disposable	23G x 30 mm
380	Hypodermic needle	Sterican	Plastic-with needle,disposable	25G x 1", 0.50 x 25 mm
381	Hypodermic needle	Sterican	Plastic-with needle,disposable	25G x 1", 0.60 x 30 mm
382	Hypodermic needle	Sterican	Plastic-with needle,disposable	23G x 30 mm
383	Hypodermic needle	Fine-ject	Plastic-with needle,disposable	21G x 11/2"
384	Microlance	BD	Plastic-with needle,disposable	20G x 11/2"
385	Microlance	BD	Plastic-with needle,disposable	22G X 11/4"
386	Microlance	BD	Plastic-with needle,disposable	23G x 1"
387	Precision glide needle	BD	Plastic-with needle,disposable	25G x 5/8"
388	Ice bag		Plastic	5 x 10 cm
389	Ice box	Eppendorf	Plastic	24 x 1.5 mL

390	K2 EDTA plus blood collection tube	BD Vacutainer	Plastic-EDTA, disposable	13 x 75 mm x 3.0 mL
391	Endofree plasmid maxi kit (10)	Qiagen		
392	MicroAmp optical 96 well plate	Applied Biosystem		96 well, 10 plate
393	Nucleospin plasmid (10)	Macherey-nagel		
394	Kit-Pathogen lysis tube L	Qiagen		
395	Polypropylene columns	Qiagen		1 mL
396	Qiafilter maxi cartridges	Qiagen		
397	Qiaprep spin miniprep kit	Qiagen		
398	Qiaprep spin miniprep kit	Qiagen		
399	Qiaquick gel extraction kit	Qiagen		
400	Qiaquick PCR purification kit	Qiagen		
401	Qiaquick spin columns	Qiagen		
402	Qia shredder	Qiagen		
403	Kodak biomax ms intensifying screen	Sigma		
404	Kodak X-omat LS film	Sigma		
405	MicroAmp 96 well tray/ retainer set	Applied Biosystem		8 tube strips 0.2 mL
406	Microlance blood lancet	BD		
407	Multidish 24 well	Nunc		24 well x 1 mL
408	Nitrobind pure nitrocellulose	Osmanics inc		0.45 micron
409	Nitrocellulose	Hybond		0.45 micron, 22 x 22 cm
410	Oak ridge centrifuge tube	Nunc	Plastic	50 mL
411	Optical thin-wall 8 cap strips	Super array		
412	Pasteur pipette	Omniceil	Plastic-sterile	3 mL
413	Pasteur pipette	Nest	Plastic-sterile	3 mL
414	Petri dish culture plate	Brandon	Plastic-sterile	90 x 15 mm

415	Ph meter apparatus		Glass	
416	Pipette multichannel		Plastic	
417	Pipette single		Plastic	
418	PluS blood collection tube	BD Vacutainer	Plastic	6 mL
419	Polystyrene round bottom tube	BD Falcon	Plastic	5 mL
420	Precision glide needle	BD	Plastic-with needle	21G x 1½"
421	Pre-separation filters	Macs	Sterile	30 µm
422	Tube racks		Plastic	15 mL
423	Real-time PCR Plates 96 Unskirted Low Profile Blue	Eppendorf		
424	Safety-lok syringe	BD	Plastic-with needle	1 MI 25G x 5/8"
425	SDS Apparatus			
426	SDS Tank			
427	Single well blot holders	Milipore	Plastic	
428	Slide box		Plastic	Large & Small
429	Sodium heparin plus blood collection tube	BD Vacutainer	Plastic-sodium heparin	4 ml, 13 x 75 mm
430	Surflo winged infusion set	Terumo	Plastic-with needle	23G x ¾"
431	Syringe	BD	Plastic-luer-lok, w/out needle	10 mL
432	Syringe	BD	Plastic-luer-lok, w/out needle	5 mL
433	System 100 cryobox	Thermo scientific	Plastic	1.5ml
434	System 100 cryobox	Thermo scientific	Plastic	1.5 mL
435	TC dish 100 x 20 SI	Nunc		
436	Needle	Terumo	Plastic-with needle	21G x 1"
437	Needle	Terumo	Plastic-with needle	27G x ½"
438	Needle	Terumo	Plastic-with needle	26G x ½"
439	Syringe	Terumo	Plastic-w/out needle	1 mL
440	Syringe	Terumo	Plastic-w/out needle	30 mL
441	Test tube			
442	Thermal film	Amersham		10.1 cm x 14m
443	Tips box		Plastic	
444	Tissue culture dish	BD Falcon	Plastic-sterile	35 X 10 mm

445	Tissue culture plate 96 well flat bottom	BD Falcon	Plastic-sterile	96 well
446	Tissue culture plate 96 well u bottom	BD Falcon	Plastic-sterile	96 well
447	UPS Supply			
448	Wood for flow cytometer transportation			
449	Urine specimen container	Sinagama	Plastic	60 mL
450	V shape 96 well plate	Nunc	Plastic-non sterile w/out lid	96 well x 300µL
451	Versafluor microcuvette	Biorad	Plastic	
452	Vial for freeze dryer		Glasware	
453	Vivaspin 4 ml concentrator			30k MWCO PES
454	Western blot accessories & glass plate for SDS page (medium)			
455	White microplate with bonded GF/C filter	Perkinelmer	Plastic	
456	96 well plate	TPP	Plastic	96 well
457	48 well plate	TPP	Plastic	48 well
458	96 well immunoplate	TPP	Plastic-w/out lid	96 well
459	6 well plate	TPP	Plastic	6 well
460	12 well plate	TPP	Plastic	12 well
461	24 well plate	TPP	Plastic	24 well
462	Pasteur pipette		Plastic	
463	Extraction thimble			
464	Falcon tube		Plastic	15 mL
465	Falcon tube		Plastic	50 mL
466	Cell culture flask T25		Plastic-filter cap,crystal grade	25 cm ²
467	Cell culture flask T75			
468	Serological pipette			25 ml (0.2 ml graduated)
469	Tips box			
470	Submicon surgical face mask			

APENDICES 4:

ACTIVITY

PICTURES











INDUSTRIAL TRAINING REPORT 1 AUGUST 2018 – 31 DECEMBER 2018