

COLLEGE OF COMPUTER AND INFORMATION SCIENCE

Academic Year 2024 – 2025

CS199F (CS PRACTICUM) NARRATIVE REPORT

Submitted by:

PINEDA, Zoe Aleczandra A.

Submitted to:

Professor Jonalyn G. Ebron

Submitted to the Faculty of Mapúa Malayan Colleges Laguna

In partial fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science

Overview of the Practicum Engagement

Company Background

The student interned at STMicroelectronics, a global leader in semiconductor manufacturing and innovation. STMicroelectronics is renowned for its highly skilled engineers and researchers dedicated to delivering cutting-edge technology solutions with a strong focus on quality and sustainability. Headquartered in Geneva, Switzerland, STMicroelectronics was founded with a mission to drive progress in electronics by enabling smarter, safer, and more energy-efficient devices. The company specializes in designing and producing a broad range of semiconductor products, including microcontrollers, sensors, power management ICs, and analog devices, serving diverse industries such as automotive, industrial, consumer electronics, and communications. STMicroelectronics' innovative approach ensures its products are compatible with the latest technological standards and platforms, including IoT, AI, and 5G applications. Committed to advancing operational excellence and environmental responsibility, STMicroelectronics is a key partner for businesses aiming to enhance performance, connectivity, and sustainability through state-of-the-art semiconductor solutions.

STMicroelectronics offers a comprehensive portfolio of semiconductor solutions, including STM32 microcontrollers, MEMS sensors, power management ICs, and advanced analog devices. Their extensive product range supports critical applications in automotive safety systems, industrial automation, consumer electronics, and telecommunications infrastructure.

STMicroelectronics proudly serves a diverse and prestigious client base, including leading automotive manufacturers such as BMW and Tesla, industrial automation companies like Siemens,

consumer electronics brands such as Samsung, and major telecommunications providers including Ericsson and Huawei. Their innovative technologies enable enhanced performance, energy efficiency, and connectivity across a wide variety of devices and systems. STMicroelectronics is committed to delivering high-quality, reliable semiconductor products that empower customers to develop smarter, safer, and more sustainable solutions for the future.

Nature of Assignments or Tasks Given

At the beginning of the internship, the student regularly met with their assigned supervisor to discuss the scope of the practicum, clarify objectives, and identify the areas where support was most needed. These meetings helped establish a clear understanding of expectations and allowed the student to align their efforts with the department's current needs and ongoing projects.

Due to software development constraints encountered by the students in coordination with the company's IT department, their primary responsibilities during the initial half of the internship involved assisting supervisors in the production area. Tasks included supporting activities related to ST's 5S principles of Sort, Systematize, Sanitize/Standardize, Sweep, and Self-discipline, which aim to maintain an organized, clean, and efficient workplace. The student also contributed to rebuilding devices such as pogo pin test equipment. Once the IT-related restrictions were resolved, the student and their fellow interns were able to formally begin development on their assigned project.

The technologies utilized during the internship included HTML, CSS, JavaScript, and Python. The system focused on foundational web development languages, aligning with the IT department's established tools and frameworks. The intern used Python, and specifically Flask, to facilitate the backend functions.

To facilitate the development process, the intern primarily used Visual Studio Code as the Integrated Development Environment (IDE), chosen for its wide array of extensions, built-in tools, and flexibility that helped boost productivity. Despite the limited tools available, the students demonstrated resourcefulness and initiative, making the most out of what was accessible to her. Even with constraints in software availability and system access, the student showed proactiveness and creativity, configuring their environment, integrating extensions, and leveraging online resources to ensure smooth development. This experience highlighted the student's ability to adapt, solve problems, and push forward effectively, even in a restricted development setup.

Total Hours Rendered

In total, the student completed 324 hours during the internship, from April 22, 2025 to July 21, 2025. This included 8 hours dedicated to orientations conducted by various department representatives, which provided the student with a deeper understanding of the company's culture. After the introductory orientations, the student was briefed across 24 hours on the rules and regulations of ST's manufacturing areas. Key discussions focused on safety training and foundational knowledge of how these areas operate.

The student then spent 17 hours being introduced to the tools and methodologies used by the department. This involved the supervisor providing an in-depth explanation of how the Test Product Engineering (TPE) department functions, including a breakdown of the roles and responsibilities of each subgroup within the department.

Additionally, the student participated in 17 hours of comprehensive training in Power BI fundamentals, during which she created insightful data analytics dashboards. What made this experience particularly valuable was the use of actual data from the TPE department, allowing the student to simulate real-world reporting scenarios. This made the training feel less like a typical classroom project using dummy data and more like genuine industry work with meaningful impact.

The student received 19 hours of training in basic debugging and hardware repair techniques, which proved essential given that the department they were assigned to is responsible for maintaining and repairing hardware used for testing integrated circuits (ICs) and load boards. This hands-on experience provided the student with a broader understanding of the company's operations beyond software development, highlighting the importance of cross-functional knowledge in a highly technical environment.

In addition, the student underwent 85 hours of training in CMMS (Computerized Management Maintenance System) and was introduced to the Satellite Storage Room (SSR). The SSR is a designated area within the production floor where KGUs and load boards are physically stored, while the CMMS serves as an inventory management system for tracking and maintaining these test assets.

Furthermore, the students participated in 30 hours of coaching sessions with technicians, engineers, and managers, which offered valuable insights into industry practices, teamwork, and technical problem-solving from experienced professionals.

Most of the student's time—a total of 124 hours—was dedicated to the development of the KGU inventory system. This involved the gathering of user requirements, planning, system design, coding, testing, and ultimately, the deployment of the new inventory management system.

Table 1.

Summary of Hours Rendered

Task	Hour Count
HR Orientation	8
Manufacturing Orientation	24
Introduction to TPE Tools and Methodologies	17
Power Bi Training	17
Basic Debugging Techniques / HW Repair	19
CMMS and SSR Training	85
Coaching sessions with technician, engineer, and manager	30
Website development (HTML, JavaScript, CSS) and project completion	124
and presentation	
Total	324

Presentation of Output

KGU Management System

Known Good Units (KGUs) are components, devices, or products that have been thoroughly tested, verified, and confirmed to be fully functional, meeting all quality and performance standards. Due to their critical role as reliable references in testing, manufacturing,

and troubleshooting, effective management of KGUs is essential to maintain production efficiency and quality assurance.

Recognizing this importance, the student along with 2 other interns in the TPE department were assigned to enhance the existing KGU inventory management system used in the production area. The project began with the student's supervisor—who also acts as the primary end user—providing a detailed overview of the current system's operation, along with its key limitations. Although functional, the existing system suffers from an outdated user interface, limited error handling capabilities, and inefficient search and tracking features, all of which hinder smooth daily operations and create significant challenges for users. The discussion with the student's supervisor allowed the student to understand what the new system needed in terms of functionality and overall experience.

Once the system requirements were clearly defined, the student and their team initiated the development of the new KGU management system. The goal of this project was to streamline and modernize the workflow for engineers, particularly in tasks such as searching for specific KGUs, performing withdrawals, and managing endorsements. The purpose was to enhance overall efficiency, reduce manual errors, and create a user-friendly interface that supports day-to-day operations in the production environment.

The new KGU management system is composed of the following key modules: enrollment of new KGUs, endorsement and withdrawal of existing KGUs, transaction history, inventory viewing, user authentication, and admin responsibilities.

KGU Enrollment

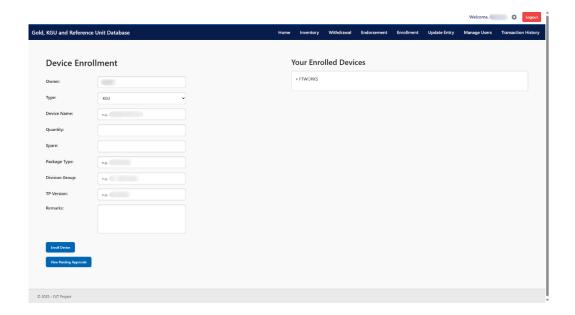


Figure 1. KGU Enrollment Page

The enrollment module allows users to add new KGUs to the system, which are then subjected to approval by the admins of the system before being added to the database.

KGU Endorsement

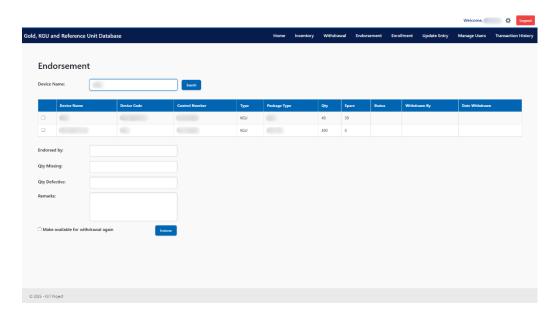


Figure 2. KGU Endorsement Page

The endorsement module involves the depositing of KGUs in the inventory system.

KGU Withdrawal

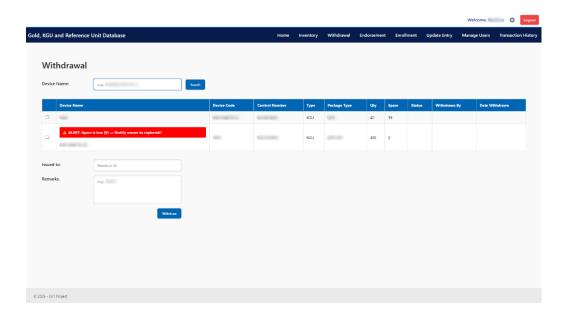


Figure 3. KGU Withdrawal Page

The withdrawal module allows users to withdraw existing KGUs from the database.

KGU Inventory View

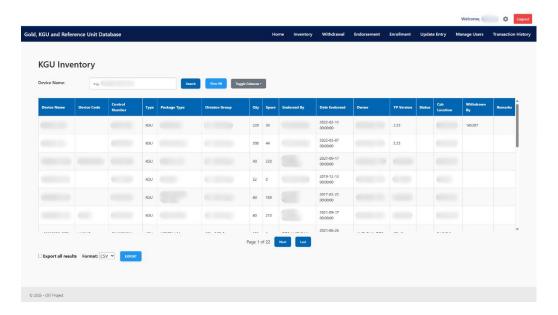


Figure 4. KGU Inventory

The inventory module allows users to view the content of the KGU database. It features an export button that allows only admins to download the contents of the inventory table and save it in an excel or CSV file. It also allows users to view only the columns they want to see, improving user experience.

User Authentication

As seen in Figure 5, 6, and 7, the user authentication module consists of the pages for login, logout, and editing individual user settings.

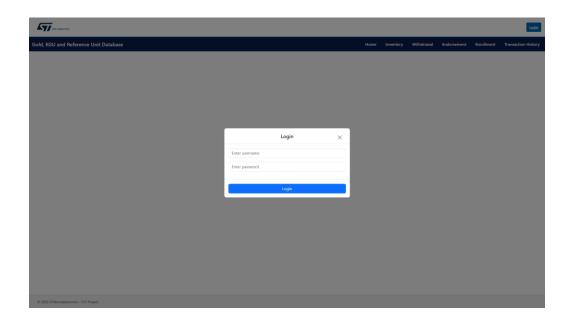


Figure 5. Login Modal

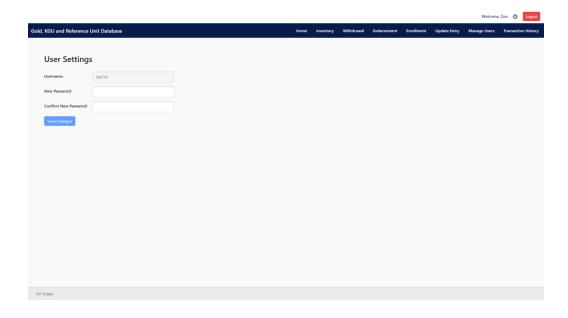


Figure 6. User Settings Page

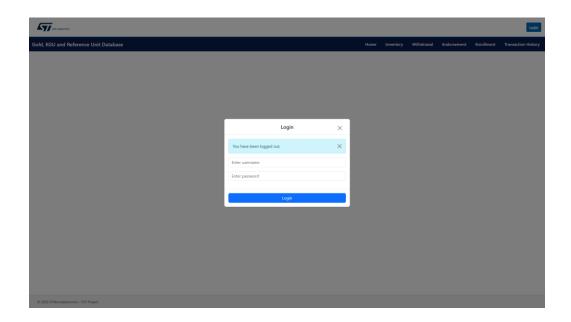


Figure 7. Logout

Admin Responsibilities

There are several actions that can only be done by users with admin-level access. Admins can (1) approve KGUs that have been endorsed into the system, (2) update existing KGU data, (3) add new user accounts, and (4) manage existing user accounts.

The Pending Approvals page allows administrators to review and approve newly enrolled KGUs before they are officially recorded in the system.

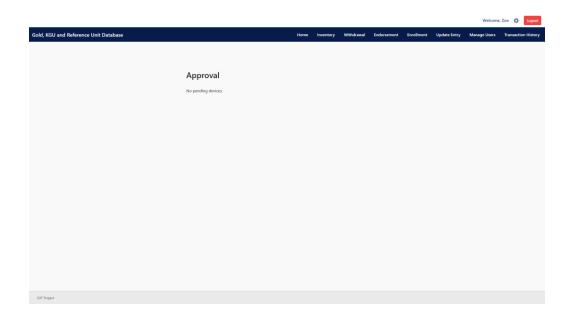


Figure 8. Endorsement Approval Page (Empty)

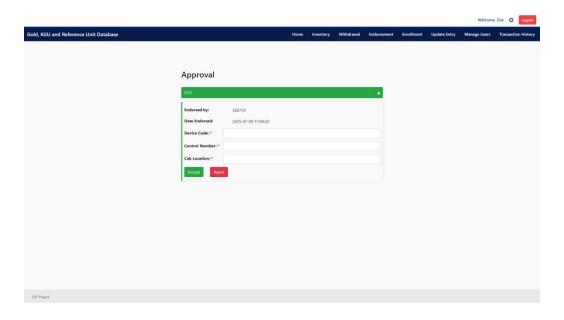


Figure 9. Endorsement Approval Page with devices of pending approval

The Update Status page enables admins to change the current condition or usage status of a KGU, such as marking it as available, in use, under repair, or decommissioned. It is also used to correct or update existing KGU details, including identification codes, locations, or assigned users.

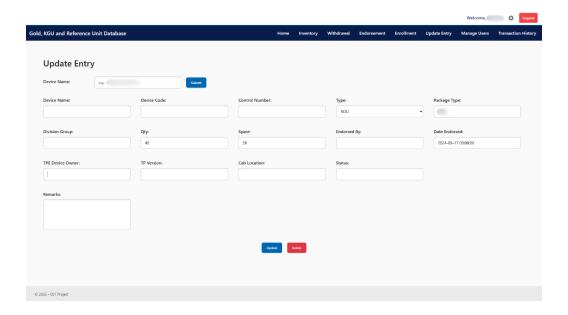


Figure 10. Update KGU Entry Page

Lastly, the User Management page allows administrators to view all registered users, assign roles, and manage system access levels to ensure secure and efficient operations.

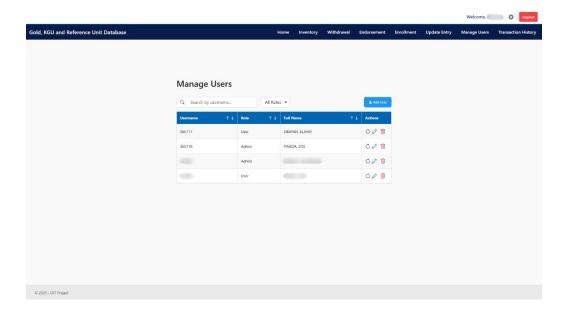


Figure 11. Admin-side User Management Page

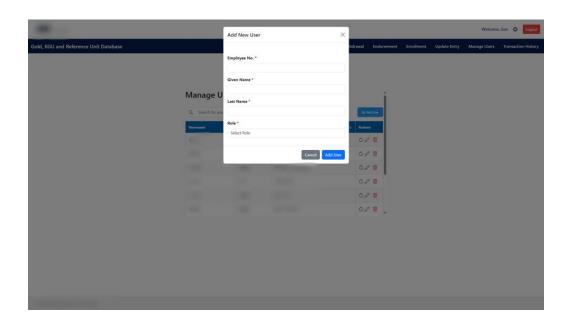


Figure 12. Admin-side Add New User Modal



Figure 13. Random Password Generation upon creation of new user account

Synthesis of the Practicum Engagement

Learnings

Throughout the course of the internship, the student acquired a wide range of technical and interpersonal skills that contributed significantly to their professional growth. On the technical side, the student strengthened their proficiency in front-end and back-end web development using HTML, CSS, JavaScript, and Python with the Flask framework. They gained firsthand experience in developing a functional web-based inventory management system, from gathering user requirements to coding, testing, and deploying the final output. Additionally, the student was trained in Power BI, where they learned how to create interactive dashboards and data visualizations using actual operational data from the Test Product Engineering (TPE) department. This experience provided not only technical familiarity with business intelligence tools but also an appreciation of how data supports decision-making processes in a real-world setting.

The student also received training in basic debugging and hardware repair techniques, which offered valuable insights into the physical components used in semiconductor testing. Understanding how devices such as integrated circuits (ICs), load boards, and pogo pins operate allowed the student to appreciate the role of hardware in the broader testing and development pipeline. Familiarization with tools such as the Computerized Maintenance Management System (CMMS) and procedures in the Satellite Storage Room (SSR) further reinforced the student's knowledge of inventory tracking and asset management.

Beyond technical learning, the student developed soft skills essential for workplace success. They improved in communication, collaboration, and adaptability through interactions with supervisors, engineers, technicians, and fellow interns. Coaching sessions helped enhance their ability to accept feedback, think critically, and contribute meaningfully to team discussions. These

learnings collectively enriched the student's understanding of how engineering work is executed in an industrial setting and prepared them for future roles in the tech industry.

Realizations

One of the most impactful realizations for the student during the internship was the importance of being adaptable, proactive, and open to continuous learning. Entering the internship with the expectation of a software-focused experience, the student quickly discovered that industry work is often shaped by real-world limitations such as tool restrictions, IT policies, or hardware availability. Instead of being discouraged, the student and their peers learned to work within these constraints by being resourceful—utilizing tools like Visual Studio Code, maximizing available online resources, and collaborating to find solutions independently.

The student also realized that effective software development cannot happen in isolation. It requires a broader understanding of how systems interact, particularly in an environment like STMicroelectronics where software supports hardware-based production workflows. Exposure to the operational side of the business, including the SSR and CMMS, helped the student see the real-world application of their work and how it fits into the overall structure of the company. Understanding how users engage with systems, what pain points they encounter, and how to translate these into design decisions was an invaluable lesson in building user-centered solutions.

Moreover, the student came to appreciate the importance of teamwork, documentation, and process discipline. Software development in a professional environment requires not just writing code, but also maintaining communication with stakeholders, documenting progress, and following version control protocols. These realizations reshaped the student's mindset from that of a classroom developer to someone capable of contributing to a production-grade system in a corporate setting.

Conclusion

The internship at STMicroelectronics was a transformative experience for the student—one that provided a comprehensive view of how both software and hardware are integrated in the semiconductor industry. It offered more than just technical training; it introduced the student to the complexities of working in a global company, the importance of understanding end-user needs, and the discipline required to deliver quality outputs under real-world conditions.

Through this practicum, the student gained valuable experience in full-stack development, system analysis, and team-based project management. They also developed a more holistic view of how software can support physical processes in production environments. Working on the KGU management system enabled the student to apply their academic knowledge to a real use case, making meaningful contributions that addressed actual challenges faced by engineers in the department.

Beyond the technical outcomes, the internship solidified the student's professional values—adaptability, responsibility, collaboration, and a commitment to continuous learning. It helped the student see the broader purpose of their role as an IT practitioner: to build systems that improve lives, optimize processes, and enable innovation. With this experience, the student moves forward with greater confidence, prepared not only to tackle future projects but also to grow as a thoughtful, capable, and impactful contributor to the tech industry.

Appendices

Appendix A

Competency-Based CV

Zoe Aleczandra A. Pineda

+63 976 032 1580 | zoepineda47@gmail.com | GitHub | LinkedIn

EDUCATION

Mapúa Malayan Colleges Laguna

Bachelor of Science in Computer Science

Cabayan, Laguna

Expected October 2025

- Cumulative GWA: 1.381547; Dean's Lister (2021-2024) and President's Lister (2023-2024); Candidate for Magna Cum Lande,
- Relevant Coursework: Data Structures and Algorithms, Software Engineering, Machine Learning, Data Analytics, Information Assurance and Security

CERTIFICATIONS, SKILLS & INTERESTS

- Certifications: CompTIA ITF+, AWS Academy Cloud Foundations Graduate, Google Cloud Essentials
- HTML, CSS, Flask, React, Bootstrap
- Python, Javascript, Java, C#, C++, MS SQL, MySQL
- Microsoft 365, Google Workspace, Asana, Slack
- Git, GitHub

ACHIEVEMENTS & EXTRACURRICULARS

Junior Philippine Computing Society - Mapúa Malayan Colleges Laguna Chapter Director for Mombership October 2024 - Present

Cleaned and structured member data in Excel to enable faster and more reliable information retrieval.

Microsoft ASEAN AI for Accessibility Hackathon 2024 2nd Place

une 2024

 Led a 4-member team in developing and pitching an Al-powered mobile app to address the lack of accessible speech therapy for children with speech disabilities in the Philippines; secured 2nd place in the competition.

WORK EXPERIENCE

Software Engineer at STMicroelectronics Inc.

- Rebuilt an internal inventory system from the ground up using Flask, HTML, CSS, and JavaScript, addressing UX, reliability, and data-handling limitations of a legacy tool.
- Structured data workflows with Pandas and NumPy, enabling efficient CSV-based storage and retrieval in the absence of a traditional database.

Virtual Assistant turned Junior Mobile Developer at Viewo

- Delivered remote administrative support across multiple projects.
- Managed business communications and conducted targeted research.

April 2025 - Present

- Developed Python scripts to convert unstructured text files into Excel spreadsheets with charts using Matplotlib and openpyxl, streamlining reporting and visualization.
- Applied agile-inspired practices: led client prototype reviews, gathered stakeholder feedback, and iteratively refined system features based on real-world usage needs.

July 2023 - Oct 2023

- Created app mockups using Figma for UI/UX planning.
- Contributed to mobile app development using Flutter and Dart.

PROJECTS

AgriKA

September 2024 - Present

- Worked with a 4-person team to develop a real-time rice yield prediction web app using Flask to support Filipino agriculturists.
- Worked with a 4-person team to develop a real-time rice yield prediction web app using Plask to support Plupino agricu.
 Built an optimized CNN-LSTM deep learning model with Keras, Pandas, and NumPy for accurate forecasting.
- Designed interactive data visualizations using Chart.JS for user-friendly analytics.
- Utilized GitHub for version control and collaborative development, ensuring efficient project tracking and smooth team integration.
- Selected as a candidate for the Institutional Research Colloquium, recognizing project innovation and impact.

Haste-urant: A Restaurant Order Management System

January 2024 - July 2024

- Co-developed a web-based order management platform for a local unli-wings restaurant.
- Built and maintained server-side functionality, ensuring seamless data flow and operations using Python and PHP.
- Designed a dynamic analytics dashboard with Pychart and Matplotlib, leveraging Pandas and NumPy to provide actionable business insights

Facial Recognition-based Attendance Log

November 2023

- Developed a facial recognition attendance system using Python and Tkinter, featuring image upload and live photo capture canabilities.
- Automated attendance tracking via face encoding and CNN, enhancing accuracy and minimizing manual entry.
- Utilized OpenCV and Pillow libraries for image processing and real-time recognition

Appendix B

Endorsement Letter





31 March 2025

MS. JOVY ORDONIA

HR Recruitment Manager, STMicroelectronics, Inc. Light Industry and Science Park II, ST-Ericsson 9 Mountain Drive, Calamba, Laguna 4026

Dear Ms. Ordonia,

The BS Computer Science program of Mapúa Malayan Colleges Laguna requires their students to undergo a Practicum program for a minimum of 324 hours during the third term of our academic calendar.

We would like to request that Ms. Zoe Aleczandra A. Pineda be permitted to have her training in your company. We believe that your company can provide the relevant exposure necessary for our students to achieve the intended learning outcomes for the BS Computer Science program. We are confident that she will be able to acquire the practical knowledge and skills expected from a Computer Science graduate which, in turn, would guarantee a continuous supply of CS professionals needed by your company.

We thank you for your favorable action and we look forward to a more meaningful linkage that is mutually beneficial to our students and your company.

With warm regards,

JONALYN G. EBRON

BS Computer Science Program Chair College of Computer and Information Science Mapúa Malayan Colleges Laguna

jgberon@mcl.edu.ph (049) 832-4076

Address : Pulo Diezmo Road, Cabuyao City, Laguna 4025 Trunkline: +63 (49) 832-4000 Fax : +54 (49) 832-0017, +63 (2) 8520-8975 Email : mclinfo@mcl.edu.ph



Appendix C

Practicum Acceptance Form

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Appendix D

Liability Waiver



REVISION NO

STUDENT TRAINING AGREEMENT AND LIABILITY WAIVER

IMPORTANT INFORMATION THIS FORM IS TO BE ACCOMPLISHED AND SUBMITTED BY STUDENT TRAINEE TO THE PRACTIC READ AND UNDERSTAND THE PROVISIONS OF THIS AGREEMENT AND WAIVER ENSURE THAT ALL SIGNATORIES SIGN THE FORM	CUM ADVISER BEFORE STARTING THE PRACTICUM.
I, Zon Alext where A. Fineda , and a student of MALAY. "MCL", do hereby voluntarily undergo on-the-job training at SI Misor electronics the "Host Company", located at 9 Marajam Prost, L15F, Calamba, Lagran , un	AN COLLEGES LAGUNA (hereinafter referred to as by hereinafter referred to as ader the following terms and conditions:
 a. That the practicum training will commence on <u>βρτ. 12</u>, 1415 and minimum of <u>524</u> hours required for the on-the-job training; 	
 That I shall observe proper decorum and act professionally at all times comply with those imposed for the training program, otherwise, I shall be excluded from fit 	s and abide by the Company's rules and regulations and arther participation;
 That in the course of my training program, I may have access to in proprietary to the Company, for which I may be required to execute a confidentiality participation in the training program; 	nformation which may be of confidential in nature and and non-disclosure agreement as a prerequisite to my
d. That the time I will spend on the training program in the completion of not be interpreted or construed as working hours and should be regarded as non-compensa- of liberality or generosity on their part, provide me with meal, travel, transportation allows	able. Provided that, the Company may, as a unilateral act
 That I fully understand that notwithstanding the allowances enumerate exists no labor-management and/or employer/employee relationship between me and the C 	ted in the preceding section which I may receive, there company where I will undergo my training;
 f. That I shall exercise due care and diligence in the tasks assigned to liabilities for damage to property or injury to third person, which may be occasioned by on-the-job training; 	me and personally be made answerable for any and all my intentional or negligent acts during the course of my
g. That I shall likewise hold the Host Company and MCL free and harm sickness or injury to myself and third parties and damage to property which I may su program, including time spent in traveling to and from any and all premises and locations program;	istain and/or may occur at any time during the training
 h. That the Company reserves the right to discontinue my training on rea- additionally, in the event my training program is discontinued for reasons attributable company for any/all the allowances, stipends, etc., which I may have received from to rogram; 	only to myself, I may be made to reimburse the Hos
 That in addition to my liability under section g and for the pre-termina aereof, I may be subjected further to disciplinary action in accordance with the school's st raduation; 	
Signed on this W day of Ayril 2025.	200 Messardra (Alcayde) ginede
	Signature over printed name of Student Trainee
Signature over printed name of Parent/Guardian (for minors only)	
OTEDBY: JONALYN G. EBRON	
Printed Name and Signature of Practicum Adviser/ Coordinator Printed Nam	ne and Signature of Host Company Representative

Appendix E

Training Plan



REVISION NO.: 00
REVISION DATE: May 10, 2016 REVISION NO.:

TRAINING PLAN

NAME	PINEDA, ZOE ALECZANDRA A.	COURSE CODE	CS199F
PROGRAM & STUDENT NO.	BSCS / 2021151538	COURSE TITLE	CS PRACTICUM

STUDENT OUTCOMES

CO1. Identify, analyze, and design business process solutions to the problem faced by the organization. CO2. Apply the different concepts of systems analysis and design, software engineering, database management, and programming courses in the problem solving process in the organization, and CO3. Acquire new knowledge and experience while in the organization

AREAS / PHASES OF TRAINING AND TIME ALLOTMENT

- 1. HR Orientation
 2. Manufacturing Orientation 24 hours
 3. Introduction to tools and methodologies 17 hours
 4. PowerBI Training 17 hours
 4. PowerBI Training 17 hours
 5. Basic debugging techniques-thw repair electrical/mechanical strategy 120 hours
 6. CMMS and SSR Training 20 hours
 7. Coaching sessions with technician, engineer, and manager 10 hours
 8. Website development (HTML, CSS, Javasoript) and project completion and presentation 140 hours
 9. Loadboard schematic design, auto components testing project, correlation tool project, KGU management website, final presentation

EVALUATION GUIDELINES & COURSE OUTCOMES

DEMONSTRATION OF SOFT SKILLS (40%)	DEMONSTRATION OF TECHNICAL SKILLS (60%)
DEMONSTRATION OF SOFT SKILLS (40%) KEY AREAS COMMUNICATION SKILLS (20%) Relate to co-trainees/supervisors terminologies and rules Recite procedures and instructions needed for the tasks Identify and describe safety signs and symbols Ask critical questions related to the tasks Produce well-written regular and incident reports Prepares and presents reports using Information and Communication Technology (ICT)	KEY AREAS Company crientation SKILLS (X%) SKILLS (X%) SKILLS (X%) SKILLS (Y%) TPE Department SKILLS (Y%) TPE Department SKILLS (Y%) TPE Department SKILLS (Y%) TPE DEPARTMENT - Able to use powerBI for data visualization and processes TPE DEPARTMENT - Able to perform basic debugging and hardware repair - Able to apply CMMS and SSR knowledge - Able to participate in technical coaching and mentoring sessions
PROFESSIONAL DEPORTMENT (20%) Observes proper grooming and attire Reports to work regularly on time and as necessary, even beyond prescribed working hour Acts according to the job description given by the company Willing to accept new tasks apart from the usual routine and responsibilities Delivers quality output on time Demonstrates respect for different individuals	
INITIATIVE (+5%)	INITIATIVE (+5%)
Volunteers to perform tasks beyond routine tasks	Volunteers to perform tasks beyond routine tasks

CONFORME	CONSENT (FOR MINORS ONLY)	NOTED BY	ENDOR SED BY	APPROVED BY
200 September 1900 September 1905 Se		100 100 100 Strain 65/06/100	AURELIA SAARLENE DELOS SANTOS	BINKING 6. EDRON 05/06/2005
SIGNATURE OVER PRINTED NAME OF STUDENT / DATE	SIGNATURE OVER PRINTED NAME OF PARENT OR GUARDIAN / DATE	SIGNATURE OVER PRINTED NAME OF PRACTICUM SUPERVISOR / DATE	SI GNATURE OVER PRINTED NAME OF PRACTICUM ADVISER / DATE	SIGNATURE OVER PRINTED NAME OF PROGRAM CHAIR / DATE

Appendix F

Complete Weekly Journal



REVISION NO.: REVISION NO.: 00

REVISION DATE: May 10, 2016

DAILY JOURNAL

AREA ASSIGNMENT TPE

IMPORTANT INFORMATION

April 22-April 28

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC. SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LIMS. HARD COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

TASK	Orientations	SHFT/TIME	8:00AM-5:30PM
My fir	st week at STMicroelectronics mostly	involved sev	veral sessions of orientations to
	me and other OJTs about how the compan	•	-
	the company's values, the do's and		
	spected to act within the production a		
	visors and the other people in our de n any software development projects during	•	•
	I learned a lot about how the corpora		
	rd to learning more about the semico		
TOTAVA	to loaning more about the serince	Tradictor Irradi	buy and meeting new people.

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REVISION NO.: REVISION DATE: May 10, 2016

DAILY JOURNAL

IMPORTANT INFORMATION

- PORTANT INFORMATION

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April 29 - May 5	AREA ASSIGNMENT	TPE	
TASK	SHFT/TIME	8:00AM-5:30PM	
This week mostly involved getting to know	our superviso	ors and how our department	
operates. My team was informed about the project we will be developing during our			
time at the company. We will be developing		•	
existing inventory management system, wi			
and another member working on the backet	end. Due to th	ne abundance of restrictions	
within the company's IT department, our supervise	ors warned us t	hat most languages and	
external software that we would need for develop	ment would mo:	st likely be turned down.	
Because of this, we were not able to start of	on the develo	pment yet as we were waiting	
for approval from the IT department.			
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COPY: (1) STUDENT; (2) PRACTICUM ADVISER

FORM OVPAA 030G

THIS FORM IS AVAILABLE AT THE OVPAA.



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IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.

HARD COPIES OF	THIS FORM SHOULD	BE COMPILED AS PART	OF THE STUDENT'S	PORTFOLIO.

DATE	May 6 - 12, 2025	AREA ASSIGNMENT	TPE Department
TASK		SHFT/TIME	8:00AM-5:30PM

The third week of my stay at ST involved learning about the department's core activities. Due to the IT department's restrictions, we still could not start on the software development project we were given. Despite this, our supervisors instead oriented us on the electrical engineering practices that they do everyday within the production area. I was able to see firsthand how they work with the hardware used to test ST's products, as well as a demo of their existing inventory system. This allowed me and my team to assess the problems that we need to address in our improved system. The existing system left a lot to be desired, such as outdated UI/UX and faulty error messages. After seeing the system, my team and I brainstormed several ideas on how to address these problems, compiled them into a document, and pitched it to our supervisor. They were in favor of the updates, so hopefully we will be starting the development as soon as the IT department approves our proposal. In summary, my eyes were opened to the operations within the production area. Given that I'm a Computer Science student, I'd never really given too much thought about what happens in the production area of a company. But this past week has expanded my view to consider not only how to analyze data and develop systems, but to also understand how this data is collected in the first place and how users interact with their systems every day. I've gained a deeper appreciation for good systems because I've seen firsthand how poorly designed systems can take a toll on not only a company's efficiency, but the overall experience for those using the systems.

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DATE	May 13 - May 19, 2025	AREA ASSIGNMENT	TPE (Test Product Engineering)
TASK	PowerBI	SHFT/TIME	8:00AM-5:30PM

This week I was able to attend the first two days of a 4-Day PowerBI training session. We were given an in-depth explanation of all the different ways data can be cleaned, transformed, and stored in PowerBI. Being a Computer Science student, this excited me because I was already familiar with the various ways of preprocessing data. But what truly sparked my interest was PowerBI's intuitive dashboard creation features. I was impressed by how easily I was able to create visualizations, like charts and cards, simply by dragging and dropping data, effectively turning this raw information into meaningful insights. Furthermore, our instructor informed us that one of the requirements to complete the training was to present a dashboard using our own dataset. For this, I tried creating a dummy dataset containing employee information. Through the process, I learned that the quality and relevance of your data play a crucial role in how effectively your dashboard communicates insights. Every data point needs to serve a purpose to ensure the visualizations are not only accurate but also meaningful to the end user. During this week, another one of our superiors pitched us an idea for a software system that could be useful in the production area. Using data collected by the testers within production, we would be responsible with visualizing the state of the hardware being tested. For example, the system would show whether each unit is passing/failing in terms of quality, or if the tester itself is the problem. This idea was very intriguing to me and my team, However, due to ongoing software and programming language restrictions within ST's IT department, we still could not start on development during this week.

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REVISION NO.:	
REVISION DATE:	May 10, 21

IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC. SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS. HARD COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

DATE	May 20 - May 26, 2025	AREA ASSIGNMENT	TPE (Test Product Engineering)
TASK	PowerBI	SHFT/TIME	8:00AM-5:30PM
My fifth	week at STMicroelectronics focused heavi	ily on data visu	alization and system planning. On
May 2	0, one of our superiors, sir Sonny, de	emonstrated	how the testers and sorters for
burn-in	boards (a type of tester in the production a	rea) function. I	He also pitched the idea of
creatin	g a Power BI dashboard to help monitor the	socket status	of each board. On May 21, we
contin	ued with Day 3 of our Power BI Train	ing, where w	e were given dummy data to
praction	ce building real dashboards. We were	e separated i	nto groups of three, and we had
to give	e a presentation demonstrating how v	ve cleaned o	ur dataset, transformed the data,
and h	ow our dashboard worked. It was a ve	ery insightful	experience as I had to work
with p	eople I had just met that day, and it a	llowed me to	observe how other people
appro	ached the problem we had to solve.	On May 22, v	ve completed the final day of the
training	and individually presented dashboards we	created using	data from our respective
depar	tments. On May 23, our team receive	d the go sigr	nal to proceed with our main
project	, so we attempted to start development that	day. There we	ere still several issues with the
softwar	re and languages we could user, however,	so we had to w	rait for the IT department's approval.
Overa	III, this week strengthened my unders	tanding of da	ata visualization through PowerBI
and g	ave me a glimpse into hardware-relat	ed project tra	acking, and allowed me to apply
what I	learned in a real-world setting.		

TRAINEE'S SIGNATURE



REVISION NO.: REVISION DATE: May 10, 2016

DAILY JOURNAL

IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS. REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.

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DATE	June 23, June 24, June 27	AREA ASSIGNMENT	Test Product Engineering Dept.
TASK	Python Automation Scripts and Web Development	SHFT/TIME	8:00AM - 5:30PM

My tenth week at STMicroelectronics, Inc. involved the development of two automation scripts using Python, and making progress on my team's main project, a web-based inventory management system. To provide some context, I was not present at the company during weeks 6-9 because my thesis group revised our manuscript and system in preparation for our final defense. During this time, my teammates at STMicro had started on the frontend and core backend parts of the inventory management system. When I came back during week 10, we had a meeting for my team to brief me on how the developed system operates and what the system is still lacking. As a group, we mutually decided that I would be in charge of developing whatever else was missing in the system. On June 23, I implemented a user authentication system that stores the user information in a csv and encrypts the credentials as opposed to hard coding it in the codebase. We used csv files because we do not have access to any relational database software like MS SQL. I was also tasked by a supervisor to create a Python script that automates the retrieval of certain light spectrum data in a .log file and convert it into an excel file with a chart corresponding to the collected light spectrum data. On June 24, I created another script similar to the one I created on June 23, but this time, the raw light spectrum data was stored in a disorganized csv file. So my supervisor asked me to also create a script for that kind of use case wherein it takes raw csv data and converts it into a more comprehensible excel file with a chart. On June 27, I implemented a user management page that allows the admins to create and manage user accounts. Overall, this week felt really rewarding. It's a relief to be able to code after getting ST's approval.

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DATE

REVISION NO.:	00
REVISION DATE:	May 10, 2016

AREAASSIGNMENT Test Product Engineering Dept.

DAILY JOURNAL

IMPORTANT INFORMATION

June 30 - July 3, 2025

- INCLIDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC. SCANNED COPIES OF THIS FORM SHOULD BE COMPILED AS PART OF THE STUDENT'S PORTFOLIO.

TASK	Web Development	SHIFT/TIME	8:00AM - 5:30PM				
Week 1	1 at STMicroelectronics involved continuing the deve	elopment of our in	ventory management system.				
On Jur	On June 30, I added a "reset password" function in the user management page that allows the						
admir	n to reset a certain user's password in	case they've	e forgotten it. Our supervisor				
<u> </u>	fically requested this feature because						
passw	ord. The system does not have permission	from the IT dep	partment to send OTPs to the				
user's	s email, which prevents the standard	password red	covery process from working.				
The c	reated function generates a new pass	sword for the	user to log in with				
tempo	orarily. On July 1, I created a user set	tings page w	herein the user can set a new				
passv	vord. I also enhanced parts of the ma	in inventory's	UI that day, such as alternating				
colors	for table rows, adding toggles for the colum	ns, and making	g sure that the table headers				
and fire	st column stay visible even after scrolling. C	n July 2, I noti	ced that the codebase was				
somew	what chaotically organized, so I decided to n	nodularize ever	ything based on its core				
functio	ns. The HTML templates were put in one for	lder, each Flas	k route was put in one folder,				
and s	o on and so forth. On July 3, my team	and I tested	I the system's functionality in the				
produc	ction area (where system is to be deployed)	and detected s	several bugs. After cleaning the				
codeba	ase up, I ensured that there were no bugs le	eft that arose fr	om moving the files around.				
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AREAASSIGNMENT Test Product Engineering Dept.

DAILY JOURNAL

IMPORTANT INFORMATION

July 7-11, 2025

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC. SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.

•	HARD COPIES OF	THIS FORM	SHOULD BE	COMPILED AS P	ART OF THE	STUDENT'S P	ORTFOLIO
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TASK	Testing, Documentation, Feedback, UI, Support	SHIFT/TIME	8:00AM - 5:30PM
My twe	elfth week at STMicroelectronics, Inc. was focused on s	ystem testing,	documentation and incorporating feedback
to refi	fine our project. On July 7, my fellow OJTS and	d I visited the	e production area to conduct another
round	d of system testing. During this session, we red	ceived feedb	pack regarding the logic for approving
pendin	ng units. We promptly implemented the necessary chang	ges. Additiona	lly, we assisted our supervisors in
organ	nizing the production area by returning the KGU	Us and load	boards to their designated shelves,
helpir	ng maintain a clean and efficient workspace. O	n July 8, I o	developed test cases for several minor
module	les of the KGU project to ensure their functionality. All te	st cases pass	ed successfully. I also supported a fellow OJT
by stres	ess testing their practicum project, identifying areas that neede	d improvement,	particularly in functionality and UI design. Later that
day, I l	helped another OJT enhance their PowerBI dashboard	by rearranging	g chart layouts and refining the overall UI/UX for
better o	clarity and presentation. On July 9, a teammate and I began d	rafting the techr	nical documentation for our system, outilining its
archit	tecture, features, and implementation details. (On July 10,	our team presented the KGU inventory
system	n to our supervisors. We received valuable and construc	ctive feedback	aimed at improving both the functionality and
user e	experience of the system. On July 11, we start	ted address	ing the feedback provided during the
prese	entation, making adjustments to enhance the s	ystem base	d on our supervisor's recommendations.
Overa	all, this week was productive and collaborative	. I gained ha	ands-on experience in system
testin	ng, documentation, and UI/UX design. I also ap	preciated th	ne opportunity to assist my
peer	rs and contribute to improving their proje	ects. I look	forward to continuing to refine our

system and learning more about technical documentation and quality assurance in the coming

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REVISION NO.:	0
REVISION DATE:	May 1

IMPORTANT INFORMATION

- INCLUDE TASK ASSIGNMENTS OR MOVEMENTS, REFLECTION ON THE DAY'S NEW LEARNING, ACCOMPLISHMENT, CHALLENGES FACED AND HOW YOU RESPONDED, OBSERVATIONS AND RECOMMENDATIONS ON THE IMPROVEMENT OF SYSTEMS / OPERATION / MANAGEMENT, ETC SCANNED COPIES OF THIS FORM SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGH APPROVED LMS.

HARD COPIES OF	THIS FORM	SHOULD BE CO	MPILED AS PART C	F THE STUDENT'S PORTFOLIO

DATE	July 14 - July 18	AREA ASSIGNMENT	Test Product Engineering Dept.
TASK	Security, Documentation, UI, Collaboration, Presentation	SHIFT/TIME	8:00AM - 5:30PM

My thirteenth week at STMicroelectronics, Inc. focused on refining system features, assisting peers and preparing for our final presentation. On July 14, I acted on the feedback we received during last week's presentation. I updated the password-setting logic on the admin side by implementing random password generation for new users and encouraging them to change their password upon initial login. On July 15, I supported a fellow OJT from another departmeny by helping improve the UI/UX of their system. I also continued working on our system's documentatoin and finalized the implementation of new features requested by a head in the department during our previous presentation. On July 16, I dedicated time to further developing our system's documentation, focusing primarily on the narrative report. It was a half-day session, so I concentrated on polishing the written content. On July 17, I added a role-based access control feature to our system, ensuring that only admins could access specific functionalities. On July 18, my team and I collaborated to finalize the content and structure of our upcoming final presentation. We reviewed our individual parts and ensured everything was cohesive and well-prepared. Overall, this week was centered on refining our system based on feedback, enhancing security and user roles, supporting fellow interns, and preparing for our final presentation. I learned more about role-based access control, improved my skills in technical documentation, and appreciated the collaborative efforts within our team.

TRAINEE'S SIGNATURE

Appendix E

Daily Time Record

DATE 1 2 3 4 5 6 7	TIME-IN	APRIL 0025			I DEPARTMENT	ASSIGNED TO	2 millouna		NC. /TPE DEPT.	
1 2 3 4 5 6	TIME-IN				MONTH		May 2025			
2 3 4 5 6		TIME OUT TOTAL MGR/SPVSR		DATE TIME-IN		TIME-OUT TOTAL MGR/SPV:				
3 4 5 6		100000000000000000000000000000000000000	HOURS	INITIALS	1	HOLIDAY		HOUND		
3 4 5 6					2	E:00	5:30	8.5		
4 5 6					3					
5					4					
6					5	8:00	5:30	8-5		
					6	LEAVE				
					7	8:00	5:30	1.5	4-5	
8					8	£ 100	5330	8.5		
9					9	8:00	5:50	1.5		
10					10					
11					11					
12					12	HO LIDAY				
13					13	9:.00	5:30	8.5		
14					14	8:00	5:31	6.2		
15					15	8.00	5:30	4.5		
16					16	\$100	2:30	8.5		
17					17					
18					18					
19		in the second			19	8,'00	5:30	8.5		
20	1				20	3:00	2:30	¥.5		
21		.,			21	8;00	5:30	8.5		
22	8:00	5:30	1.5		22	8:00	5159	8.5		
23	8:00	5:30	8.5		23	\$:00	1:30	4.5		
24	8:00	5:30	3.5		24					
25	LEAVE				25		F103			
26					26	B.'00	5:30	1.5		
27					27	£:00	5:30	1.5	-	
28	8:00	5:30	8.5		28	¥00	2:30	8.5	-	
29	8:00	5:30	8.5		29	LEAVE	_		-	
30	8:00	5:30	8.5		30	CENAR	-			
31					31					



REVISION NO. 00
REVISION DATE: May 15 3058

DAILY TIME RECORD*

NAME OF STUDENT		TINEDA, ZOE ALECZANDRA A.			NAME OF HOS DEPARTMENT	T COMPANY/ ASSIGNED TO	STMICROBLECTRONICS, INC. / TPE DEPT			
MONTH		JUNE 2025			MONTH					
DATE	TIME-IN	TIME-OUT	TOTAL HOURS	MGR/SPVSR INITIALS	DATE	TIME-IN	TIME-OUT	TOTAL HOURS	MGR/SPVSR INITIALS	
1			1100110	INTIPLO	1	8:00	5:30	8.5	INT DALL	
2	LEAVE				2	8:00	5:30	7.5		
3	LEAVE				3	8:00	5:30	1.5		
4	LEAVE				4	LEAVE	7.50	,		
5	LEAVE				5	CCUAD				
6	HOLIDAY				6					
7					7	9:18	5:30	7.91		
8					8	8:00	5:30	8.5		
9	LEAVE	100			9	4:00	5:30	8.5		
10	LEAVE				10	8:00	5:50	8.5		
11	LBAVE				11	8:00	5:30	8.5		
12	HOLIDAY				12					
13	LEAVE				13					
14					14	8:00	5:30	8.5		
15					15	8:00	5:3)	8.5		
16	LEAVE				16	4:00	5:50	4.5		
17	LEAVE				17	8:00	5 - 30	8.5		
18	LEAVE				18	8:00	5 ', 50	1.5		
19	HOLIDAY				19					
20	LEAVE				20					
21	Const				21	8:00	5:30	15		
22	\$:00	5:30	8.5		22	8:00	5:50	8.5		
23	8:00	5:30	8.5		23	8:00	5:30	8.5		
24	.,				24	8:00	5:30	8.5		
25					25					
26	T:00	1:00	4.5		26					
27					27					
28					28					
29	8:00	1:00	4.5		29					
30					30					
31					31					

Signature over printed name of Practicum Supervisor 7/13/4r Date * To be validated once a week by the Practicum Adviser Coordinate
** This may be replaced by the DTR officially used by the company

FORM OVPAA 030H