

**MAASAI MARA UNIVERSITY**

**SCHOOL OF PURE, HEALTH AND APPLIED SCIENCES**

**DEPARTMENT OF MATHEMATICS AND PHYSICAL SCIENCES**

**REPORT FOR THE INDUSTRIAL ATTACHMENT AT THE DIRECTORATE OF INFORMATION, COMMUNICATION AND TECHNOLOGY FROM MAY TO AUGUST AT THE UNIVERSITY OF ELDORET DEPARTMENT**

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# DECLARATION

This report is my original work submitted to Maasai Mara University in partial fulfillment of the requirement of Bachelor’s Degree in Applied Statistics with Computing as a result of experiences and knowledge gained during the May 2023 to August 2023 attachment and has not been presented before in any institution of higher learning for either an award of certificate, diploma or degree. All the content, ideas, and findings presented in this report are the result of my personal efforts and experiences during my attachment at University of Eldoret ICT. I have properly acknowledged and cited any sources, references, or external materials used in this report. No part of this report has been copied from any other source, including books, articles, websites, or other reports, without proper attribution.

Kelvin Kiplagat kigen

SB07 /SR/MN /2018

Sign……………………..Date………………………

This report has been submitted with my approval as the University supervisor.

Dr. Isaac Monochi

Maasai Mara University

Sign……………………. Date……………………..

# 

# ACKNOWLEDGEMENT

First and foremost, I wish to take this opportunity to express my sincere gratitude to the Almighty God for this far He has brought me and for good health though my attachment. I would also like to thank the Administration of the University of Eldoret for giving me an opportunity to conduct my attachment in their organization. I would also like to acknowledge all the staff of the organization, for their guidance, advice, and direction during my attachment period. I wish to also thank my lecturers for their insight and knowledge shared in class which was quite helpful during my learning period. I cannot forget to earnestly thank my attachment supervisor Rodgers Koech for closely checking that I complied with the best practices as enshrined in the public procurement and disposal Act . I would also like to acknowledge the work of the following people:

• My supervisor, Dr. Isaac Monochi for the support and guidance incoming up with this report. Thank you very much for the support you accorded to me and for inspiring me to do my very best in my duties. I appreciate.

• My fellow attachés who together we learnt and shared responsibilities and experiences. To extend my gratitude to the entire ICT staff

**ACRONYMS AND ABBREVIATIONS**

UOE– University of Eldoret

ICT – Information and Communication Technology

ERP – Enterprise Resource Planning

RJ45 – Registered Jack-45

CMOS – Complementary Metal-Oxide Semiconductor

Cat 6 – Category 6

UPS – Interruptible Power Supply

# ABSTRACT

This industrial attachment report presents a comprehensive overview of my experiences, learning, and contributions during my attachment at University of Eldoret ICT. The attachment spanned from June to August, providing me with the opportunity to gain practical insights into the Computer Science sector and enhance my professional skills. The report begins with an introduction outlining the objectives and expectations set prior to the attachment. A detailed description of University of Eldoret ICT and its operations is provided in the Organization Overview section.

Throughout the attachment, I was assigned a variety of tasks and responsibilities that enabled me to apply theoretical knowledge from my academic studies to real-world scenarios. These experiences are discussed in the Attachment Details and Learning and Experiences sections.

One of the highlights of my attachment was the chance to contribute to repairing system, installed software and networking, which allowed me to make a meaningful impact within the organization. this attachment has been a valuable and transformative experience. It has not only broadened my IT sector but has also equipped me with practical skills and insights that will undoubtedly shape my Data science path

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# CHAPTER ONE

# 1.0 Introduction

## 1.1 Background of the Institution attached

The University of Eldoret is located approximately nine (9) kilometers along the Eldoret-Ziwa road from Eldoret town, in Uasin Gishu County. Its origins trace back to 1946 when it was established as a Large-Scale Farmers Training Centre by white settlers. In 1984, it underwent a transformation into a teachers’ training college, known as Moi Teachers’ Training College, primarily offering Diploma Science Teachers Training. Due to the double intake crisis, Moi University took over the College in 1990, designating it as Chepkoilel Campus, where it expanded its programs to encompass natural, basic, and applied sciences.

In August 2010, a significant milestone was achieved when, through Legal Notice No. 125 of 13th August, 2010, the Campus was elevated to the status of a University College, named Chepkoilel University College. This institution operated as a Constituent College of Moi University. Finally, on 11th February 2013, following the award of Charter by the President, it was rebranded as the University of Eldoret.

The University of Eldoret Is rooted in the fields of Science, Agriculture, and Technology, and it has steadily expanded from its initial Schools of Forestry and Science to its current structure, boasting nine schools, 34 academic departments, and a student population exceeding 14,000. The dedicated teaching and non-teaching staff count exceeds 1,300. Additionally, the University manages two Nursery schools, two Primary schools, and a Secondary school on its premises. The University’s total acreage spans 1,054 acres, with a portion allocated for agricultural activities.

## 1.2 Vision

To be a premier university that is globally visible in knowledge generation and technological innovations.

## 1.3 Mission

To provide high quality education and training science, agriculture and technology that promotes networking, partnership and linkages with other institutions and industry.

## 1.4 Objectives of the University

 To excel in teaching, research, consultancy and outreach.

 To advance Science, Agriculture and Technology for sustainable Development

 To train and develop informed practical, innovative and self-reliant graduates of international repute

 To nurture and uphold corporate social responsibility

 To offer more opportunities for education and training

 To source and optimize the use of resources to achieve the set goals.

## 1.5 Core values

 Innovativeness

 Customer satisfaction

 Integrity

 Responsiveness

 Equity

 competitiveness

 inclusivity

### 2.7 Organizational structure

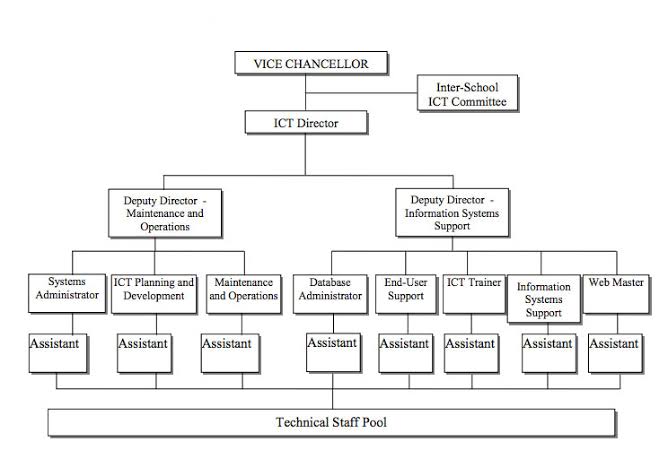


Figure 2.1

Industrial attachment is a structured program that allows students to work within real-world organizational settings, applying their academic knowledge to practical tasks and projects. It typically occurs within a specific industry or field related to the student's area of study, providing a hands-on learning experience that complements classroom instruction.

During this attachment period, students have the opportunity to gain first-hand experience in their chosen field, observe industry practices, and develop essential skills that are crucial for their future careers. This exposure to the professional environment fosters personal and professional growth, enhances problem-solving abilities, and nurtures a deeper understanding of industry dynamics.

### **1.2 Relevance of Industrial Attachment**

The relevance of industrial attachment in today's competitive job market cannot be overstated. Employers increasingly seek candidates with practical experience and a demonstrated ability to apply their knowledge in real-world scenarios. Industrial attachment serves as a vital platform for students to:

* Acquire industry-specific skills and competencies.
* Develop a network of professional contacts.
* Enhance their problem-solving and decision-making skills.
* Gain insight into the day-to-day operations of organizations.
* Build a portfolio of practical experiences that can set them apart in the job market.

Furthermore, industrial attachment offers students the opportunity to explore potential career paths, identify areas of interest, and make informed decisions about their future professional pursuits

# CHAPTER TWO

## 2.0 Introduction

Industrial attachment, is a crucial component of modern education and professional development. It offers students an invaluable opportunity to bridge the gap between theoretical knowledge acquired in the classroom and the practical demands of the professional world. This chapter serves as an introduction to the concept of industrial attachment and outlines its significance in shaping the careers of aspiring professionals.

## 2.1 ACTIVITIES DONE

#### 3.1 Data Entry across Departments:

During my time at the institution, I played a pivotal role in data management. I was entrusted with the task of data entry across various departments. This included crucial tasks such as updating the student list at the ICT Department. Additionally, I was responsible for managing the records at the Library, ensuring that all information was up-to-date and accurately recorded. This role not only honed my skills in data management but also familiarized me with the operations of different departments within the institution.

#### 3.2 Ticketing System for ICT Support:

One of my key responsibilities was to create tickets for students seeking assistance from the Director for ICT. This system streamlined the process of addressing students’ concerns and queries, ensuring a smooth flow of communication between students and the ICT department. It was essential to prioritize and categorize issues to ensure timely solutions.

#### 3.3 Assisting at the Help Desk:

I was an integral part of the Help Desk team, where I provided various services to support both the students and the faculty. This included tasks such as printing lists of students for different departments and saving this information in the ERP data management system. Serving in this capacity, I had the opportunity to interact with diverse departments and understand the institution’s inner workings.

#### 3.4 Student Portal Management:

Given the digitization of many of the institution’s processes, students heavily rely on their online portals. I was actively involved in managing these portals, including resetting student portal passwords. This responsibility demanded attention to detail, a high level of discretion, and a deep understanding of the institution’s digital infrastructure.

#### 3.5 Software Installation for the Department of Mathematics and Sciences:

In collaboration with the Department of Mathematics and Sciences, I undertook the task of installing essential statistical software. These included industry-standard applications such as R, MS Excel, SPSS, Tableau for Visualization, and SAS. By equipping the department with these tools, I played a part in enhancing the research and data analysis capabilities of the students and faculty.

#### 3.6 Field Surveys and Network Maintenance:

To better understand student concerns and evaluate the effectiveness of the ICT services, I conducted several field surveys. These took place at the university’s town campus, where we actively sought feedback from students about their areas of concern. Regular visits were made to ensure top-notch ICT services. Furthermore, in coordination with my fellow attachés, I participated in restoring network connections across various departments. This was a critical role, ensuring that there was no data loss and that all departments remained interconnected seamlessly.

**2.2 Ecological Factors**

Eldoret experiences a relative humidity of 84%, with an average temperature ranging from a minimum of 16.6°C to a maximum of 26°C. The region receives an annual average rainfall of 1103mm. The university farm experiences a bi-modal rainfall pattern, with peak rainfall occurring in the months of April and January. Of the university's total land area, 1054 acres are allocated for agricultural production.

### **2.8** **Department of Information Communication Technology**

This is department is responsible for all technological issues within the organization and as well as ensure the smooth running of services needed by the workers and staff respectively.

### **2.9 Mission**

To provide efficient, cost effective and timely ICT resources and services in support of teaching research and extension

**2.10 Vision**

To be a center of excellence in the provision of high quality information and communication technology infrastructure services and facilities within the university.

**2.11 ICT Quality objectives**

1. Ensure network availability at 99.9%
2. Ensure availability of MIS service at 95%
3. Grow ICT infrastructure by 1% annually
4. To improve ICT end-user capacity in UoE by 1% annually
5. To improve efficiency in delivering ICT end-user support and equipment maintenance by 1% annually

# CHAPTER THREE

# 3.1 ASSESSMENT OF THE INSTITUTION

The landscape of higher education is punctuated with institutions that not only shape minds but also influence the course of regional and national progress. The University of Eldoret, located in the heart of Uasin Gishu County, stands as a testament to such influential establishments. This assessment endeavors to unravel the tapestry of the University’s history, evolution, and its current standing in the academic world. From its humble beginnings as a training center in 1946 to its current stature as a premier university, the journey of the University of Eldoret mirrors the transformative power of dedicated academic pursuits. Through this chapter, we aim to contextualize its contributions, evaluate its infrastructural and academic offerings, and understand its role in bridging the academic-industrial divide through initiatives like industrial attachments. In doing so, we hope to provide a holistic understanding of the institution, highlighting its strengths, potential areas for growth, and its undying commitment to excellence in education.Predominantly steeped in Science, Agriculture, and Technology, the University of Eldoret has witnessed impressive growth. Commencing its academic journey with the foundational Schools of Forestry and Science, it has now evolved to encompass nine schools, 34 academic departments, and a formidable student body of over 14,000. Committed to holistic education, the university also oversees two Nursery schools, two Primary schools, and a Secondary school within its premises. Additionally, the sprawling campus extends over 1,054 acres, a fraction of which is judiciously allocated for agricultural endeavors.

### 

### **3.2 Knowledge and skills attained**

The knowledge and skills acquired during the course of my attachment forms the bedrock of my future career development. The strategies learnt in keying in, installing software system and the entire activities will go a long way in ensuring my application of the knowledge and skills in any entity and undertaking that I may find myself into. Therefore, I am confident in applying the knowledge I have learnt in any company that may give me an opportunity to offer my services in my career.

**3.2.1 Skills learned or gained during attachment**

The profile of skills gained; I have learnt how:-

* To interact with other staff members and collaborate in order to bring the best services and attain the goals of the organization.
* To operate different kinds of printers and change the toners. I was able to attend to different types of issues with printers during the attachment and was able to learn a lot .
* To install and configure the server-based network(LAN) in different department during the attachment.
* To do computer upgrades and general PC maintenance
* To install different kind of software that are being used in the institution
* To troubleshoot peripheral devices

## 3.2.1 Competencies acquired

* Problem solving skills – During my attachment period I encountered some work-related problems and through that, I was able to learn how to solve the problems and come up with the solution with the best interest at hand.
* Interpersonal skills – I have learned how to interact with other staff. This skill was mainly used when giving hardware support and printing of the status reports in all printers. This skill is important since one is able to relate well with other staff in order to be able to meet the organization goals.
* Management skills – in this area I learned different management skills including time management and ensuring quality of work. With this skill, I finished the tasks given to me in time and giving the best quality of work needed.
* Communication skills – In the organization one has to have the communication skills to enable smooth running of activities within the organization.
* Self-management skills – I was able to learn how to be timely in all the tasks given. I beat the deadlines of different activities and task that I was entrusted with. I also learned how to be in the right place in the right time like coming to work before 8am and some minutes before the daily breaks are over.
* Professionalism and work ethics – This is an important part of the skills one has to have in any area of study and especially in the IT department. I was able to apply the code of conducts and professionalism learned in during my coursework.

### 3.3 INTEREST

### **3.3.1 Things enjoyed least and why**

* Repetitive Tasks: Performing repetitive and monotonous tasks can be frustrating. For example, if you were assigned to data entry or routine maintenance work, you might have found it less enjoyable.
* Inadequate Guidance: Insufficient guidance or support from supervisors or colleagues can make it difficult to navigate your tasks and projects.

#### **3.3.2 Things enjoyed most and why**

1. University of Eldoret offers its employees a good and favorable working environment.
2. The departments within the organization are well organized with each having a manager to ensure that activities are running smoothly.
3. ICT department staff have a good cooperation and teamwork is highly encouraged among themselves.
4. The employees have self-drive. Everyone is timely and all the tasks and jobs are completed in time.
5. There is good student to staff relation by all the employees who interact directly with students like the help desk.

#### 3.4 strengths

* Technical Proficiency: Demonstrating a strong understanding of programming languages, software development, and computer systems is a significant strength in the field of Computer Science.
* Problem-Solving: Your ability to analyze complex technical problems and devise effective solutions is a valuable asset.
* Adaptability: The capacity to quickly learn and adapt to new technologies and programming languages is crucial in a rapidly evolving field like Computer Science.
* Attention to Detail: Being meticulous and thorough in your work, especially when writing code or debugging, helps prevent errors and ensures the quality of your work.
* Analytical Thinking: Your capacity to think critically and analyze data or code is a vital skill in troubleshooting and optimizing software.
* Teamwork: Collaborating effectively with colleagues, sharing knowledge, and contributing to group projects is an essential skill in a team-oriented industry.
* Communication: The ability to convey technical concepts and ideas to both technical and non-technical stakeholders is valuable for project success and client satisfaction.
* Time Management: Efficiently managing your time and meeting project deadlines demonstrates your reliability and professionalism.

**3.5 weaknesses**

* Neglecting Soft Skills: Focusing solely on technical skills and neglecting soft skills, such as teamwork and communication, can limit career advancement.
* Limited Networking: Failing to actively network with peers and professionals in your field may hinder your access to valuable opportunities and resources.

#### 3.6 Challenges encountered during attachment

* Technical Challenges: Complex technical tasks or projects may present challenges, especially if they involve unfamiliar technologies
* Balancing Priorities: Managing multiple tasks or projects simultaneously and prioritizing them effectively can be challenging.
* Pressure to Perform: The expectation to meet or exceed performance standards and deliverables can create stress and performance anxiety.

# CHAPTER FOUR

# 4.0 CONCLUSIONS AND RECOMMENDATIONS

#### 4.1 Conclusion

The industrial attachment at the University of Eldoret has been an instrumental chapter in my academic journey as a student of Bachelor of Science in Applied Statistics with Computing. The hands-on experience in various roles, especially those aligned with my field of study, such as software installations and data management, has enriched my practical understanding immensely. This experience has not only fortified my theoretical knowledge from the classroom but also provided me with invaluable insights into the real-world applications of statistical computing.

The challenges I faced, from data entry to managing student portals, taught me the importance of attention to detail, problem-solving, and effective communication in a professional environment. The tasks related to my course, such as the installation of statistical software like R, SPSS, and Tableau, have strengthened my technical skills and given me a deeper appreciation of their relevance in academic research and beyond. In essence, this attachment has bridged the gap between academic theory and its practical application for me. It has honed my skills, bolstered my confidence, and provided clarity on the path I wish to tread in the future as a professional in the field of Applied Statistics with Computing.

Throughout this attachment, I have encountered and overcome various challenges, from tackling complex technical tasks to managing tight deadlines. These challenges have not only strengthened my technical abilities but have also nurtured my problem-solving skills and resilience.

I have had the privilege of working alongside a dedicated team whose guidance and mentorship have played a pivotal role in my professional development. Their willingness to share their expertise and provide constructive feedback has been instrumental in my growth during this attachment. Moreover, the exposure to diverse projects and technologies has broadened my horizons and deepened my understanding of the ever-evolving field of Computer Science. The hands-on experience gained in programming, software development, and database management has been particularly enriching.

As I reflect on my time I am reminded of the importance of effective communication, teamwork, and adaptability in a dynamic work environment. These soft skills, along with my technical competencies, will undoubtedly shape my future career endeavors. I would like to express my sincere gratitude to all those who have supported me during this attachment, including my supervisors, colleagues, and professors. Their guidance and encouragement have been instrumental in my success.

This attachment has reaffirmed my passion for Data science and has inspired me to continue pursuing excellence in this field. As I embark on the next phase of my academic and professional journey, I carry with me the lessons learned and experiences gained during this attachment. I am confident that the skills and knowledge acquired during this attachment will serve as a solid foundation for my future endeavors in the field of Statistics . I look forward to applying these skills to contribute meaningfully to the ever-evolving world of technology.

# 4.2 Recommendations

#### 4.2.1 To University of Eldoret ICT

* The Institution should consider providing the students on industrial attachment with temporary user names to enable them practice on the ERP application.
* The IT department should consider providing enough training of the activities and application used by the University
* Continue to promote a mentorship culture within the organization. Encouraging experienced professionals to mentor and guide attachees can greatly enhance the learning experience for future attaché

# REFERENCES

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# APPENDICES

