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TECHNICAL SKILLS DEVELOPMENT

1 Introduction to Technical Skills and Development

- 2 Technical skills are the ability and knowledge used to perform practical task in the area of science and technology in engineering and math. Technical skills are also required the use of certain tools. Technology is also required to be able to use this tool no matter what individual, employee, organization or industries may think or knowledge they may have in terms of science and technology. Some technical skills will be required to carry out most day-to-day activity. Technical skill development is the most reliable means for modern day's task in a workplace. It is an organization's ability to use technology skills in both (Hard Skills and Leadership Skills) as a competitive advantage for business. Technical skills are the expertise and competence required to perform specific digital or physical tasks. No matter what industry or employees are in, knowledge of some technical skills will be required to fulfil day-to-day performance. Technology skills development is the most efficient strategy for a continuous upskilling of technology teams.
- 3 Economic transformation demands a healthy workforce equipped with the knowledge and skills to be highly productive in the workplace and to generate innovations in technologies, processes, products, and services. In the UK, the construction industry is a key sector for the economy, contributing nearly £90 billion with around 3 million jobs based in construction.
- 4 The construction sector is a major part of the UK economy. It represents some 7% of GDP or £110bn per annum of expenditure - some 40% of this being in the public sector, with central Government being the industry's biggest customer. ¹
- 5 The sector is dominated by high levels of self-employment, with small and micro businesses accounting for around 95% of the sector, although large companies conduct a disproportionate proportion of the work by value. While soft skills are important in the workplace, technical skills, which are usually a type of hard skill, are crucial to the growth of your business and the happiness of your employees.

Activity Week	Activity	Key Learning Points	Key Benefits/Value Added	Added Further Comments and How Can I Improve It in Future?

Week 1	Introduction to Health and Safety	Health and safety refer to regulations and procedures intended to prevent accidents or injury in workplaces or public environments. It should be noted that staying safe is a collective responsibility of both employers and employees. The employer is responsible for creating a safe working environment that meets government health and safety standards. They must ensure that their work activities do not adversely affect workers, and people in their immediate environment. Their work activities must as much as possible prevent occupational hazards and work-related health issues	I gained more knowledge on how to avoid dangers in the workplace. Also, I learned the importance of working in a safe environment. I realized that my healthy work habits or otherwise could negatively or positively affect my co-workers and the immediate environment. I have come to the realization that there are health and safety laws put in place to ensure safety at work thereby reducing the risks of accidents to the barest minimum.	As I now have the knowledge and the important of safety that it is the responsibility of employees and every one to ensure of there own safety I will make sure I make it a priority in every situation safety being carry out at all time and more understanding of how to better improve health and safety in my workplace. By this, I am able to create awareness among my co-workers and ensure that safety for one is safe for all.
WEEK 2	RISK ASSESSMENT	Risk assessment is the evaluation of the possibility of accidents that would happen in a workplace. It foresees what could possibly go wrong and create measures to mitigate against such occurrences.	I have been able to recognize hazards in my workplace and how to control such. Risk assessment also helps set risk management standards based on legal requirements and acceptable safe practices. That has been put in place	The risk assessment would prepare one for any occurrence that could negatively affect the health and safety of workers and the environment. It is important to identify risks as early as possible and to put in place measures to overcome such.as identifying a risk early

			for one to follow to identify should they be any one can report it to the management or take care of it	will help to keep the environment and workplace safe from accident that could occur because of negligent of safety awareness.
Week 3	Composite Structure	Composite refers to the materials which make up entirely new material. They do not dissolve or blend into each other but form a new item having a different and unique property. And they are made up of several part or element.	Composite materials have been in use for over a thousand years. Composites are made up of three components. It is observed that there are different types of composites. They have a wide range of uses across different fields. This ranges from aeronautics to automobiles to recreation.	Composite has a huge positive impact on the environment. It is durable and a very good insulator. The flexible properties make it easy to use in various ways. Its low weight properties contribute to easy transportation and installation with less impact on the environment. Due to the versatility of its materials, it opens a door for use of recycled, natural and biomaterials for the filler or the binding.
Week 4	Optimization Techniques	Optimization refers to getting the best possible outcome in the use of something. In building engineering, optimization means choosing the correct inputs in the correct quantity to get the best outputs depending on one's constraints.	There is always a limit or confinement to the optimization process. It is applicable to all fields. In construction, warehouse placement should be strategically positioned in a central location so that shipment or delivery to various construction sites can be as easy and seamless as possible. Also, in construction, one should be able to bear in mind that	Production activities should be carried out in such a way that the best possible outcome is achieved given the constraints of time, resources, and human resources.

			construction activities should not adversely affect the immediate environment while trying to carry out a project.	
Week 5	Optimization Techniques	The topic was re-visited and reviewed with new members of the class.	There was a re-iteration of the importance of optimization of building and construction techniques.	Understanding what optimisation all is about. this will help one to take the right step to avoid the constrain that may occurred in the process in caring out task at workplace.
Week 6	Software Development I	Software is a set of instructions that are written by humans to direct a computer on the steps to be followed to operate. These steps are called programs and a collection of these programs is what is referred to as software. It starts from an idea to its delivery.	I have learnt that there is different software for different purposes. These software's are built specifically for purposes such as billing, education, library, etc. System software's are designed to enable application software to run on a computer. There are other software's such as operating software which enables the hardware to run	Before software is developed, its purpose must be known. Depending on the problems that will be solved, needs and constraints must be considered as well as the current infrastructure. It should also be noted that the available budget must be able to cover the costs of the software development. And safety procedure must be followed as this can not be ruled out in anyways as far as technology is concerned safety should be part of the plan
Week 7	Programming and Logic	Programming is the steps involved in a programming language. Program development has a cycle. This ranges from understanding the problem to maintaining the program.	Logic programming is a high-level language. It implements computation's logic rather than mechanics. Programming and logic allow data to be represented	Variables can be used to store different values. Constants are used to represent values that do not change. They stay the same every time a program is executed.

		It should be noted that software is needed to interpret the program into machine language.	both intentionally and extensionally. It is learnt that programming is very advantageous. They are well suited for rapid interpretation of a data structure and the code to implement very complicated ideas.	
Week 8	MATLAB programming	MatLab is a programming platform designed specifically for engineers and scientists to analyse and design systems and products that transform our world. MATLAB is a programming platform designed specifically for engineers and scientists to analyse and design systems and products that transform our world.	It has made me understand that one can develop the computational codes easily, perform extensive data analysis and create simulation videos	I think spending more time practicing we help me to understand mat lab easier to used and carry out task
Week 9	Mat lab programming	Mat lab coding is programming and a numeric computing platform that allow scientist and engineers to analyse data and create models by inputting a code.	Some of the advantages of mat lab programming symbolic computing can be easily done implement and test your calculations on like any other programming	

Week 10	We did revision on week 1 discourse on how to create a logbook chat using sample template and submission.	Revision on how to complete the logbook key point and how to create table using the template and a grid on how to submit an assignment or class work	This has giving me a better knowledge on how to create a table. I have also leaned how to submit my assignment	This can be improved on with continues practise

CONCLUSION

I have come to the realization that in engineering technical skills development is an integral part in building and construction. The importance cannot be over-emphasized. I enjoyed learning more about health and safety in the workplace. It was really an eye-opener getting to know the ripple effects that one's carelessness could have on co-workers and the immediate environment. Safety should always be a priority. As unsafe act could cost an organization life and properties if ignore as this has a great danger if safety is not followed

The classes on risk assessment and optimization were quite interesting. I enjoyed learning how to ensure that I am able to get the most out of any given resource(s) given the constraints available at the time. I am now able to manage my risks and also know how to mitigate against such.

Although programming and logic are quite new to me, I discovered how interesting they are and how helpful they could be in the construction business. I still have challenges in these classes as wells Matlab but I am willing to learn more about them. They are quite interesting.

Finally, technology advancement may not totally take over the human workforce, there is need for humans to upskill even as technology advances. After all, to get the most out of their technological investments, firms have to hire workers who are more highly skilled and educated. As Brynjolfsson and McAfee like to say, we should continuously be investing in new skills to race with the machines. By continually updating our skills and seeking alternative work arrangements, we can "race with the

machines.” This will lead to an increased efficiency and productivity in a workplace i.e. This will lead to increased efficiency and productivity in the workplace ce i.e. more can be achieved even with the limited time constraint and available resources.

REFERENCES

1. (Government Construction Strategy <https://assets.publishing.service.gov.uk/>).
2. Brynjolfsson, E., McAfee, A. (2014). The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. (W.W. Norton & Company, New York).
3. Google search.