Tales of Soils: Get Your Hands Dirty, but Make Yourself Brainy

Authors:
Chiam Jing Tong[1]
Danieal Zita[2]
Muhammad Faqree Aiman Mahtar[3]
Chee-Ming Chan[4]
Salina Sani[5]
Tuan Noor Hasanah Tuan Ismail[6]

E-mail:
chan@uthm.edu.my[4]
salinas@uthm.edu.my[5]
hasanah@uthm.edu.my[6]

Abstract: Tales of Soils: Get Your Hands Dirty, but Make Yourself Brainy is a compilation of personal, heartwarming stories of self-discovery, learning and growth of student hailing from the SOIL Class, Semester 2 Session 2023/2024. The essays are arranged by sections: It starts with individual aspirations written at the beginning of the semester, followed by a collective group essay as closure at semester end. The stories tell of anxiety for the unchartered waters, worry for the unknown new knowledge base and excitement for the adventure in store, then threads through to the group reflections coming out of the journey after overcoming SOIL perils, EARTH ambush, and GROUND booby traps. We especially hope that future SOIL students would enjoy the book, and find something worthy to take with them on the earthy learning adventure. Happy reading.

Keywords: Interactive learning, experiential education, STEM education, curiosity-driven learning and scientific curiosity

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EDITORS
CHIAM JING TONG
DANIEL ZITA
MUHAMMAD FAQREE AIMAN MAHTAR

Penerbit UTHM

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List of Editors:
Chiam Jing Tong
Daniel Zita
Muhammad Faqree Aiman Mahtar
Chee-Ming Chan
Salina Sani
Tuan Noor Hasanah Tuan Ismail

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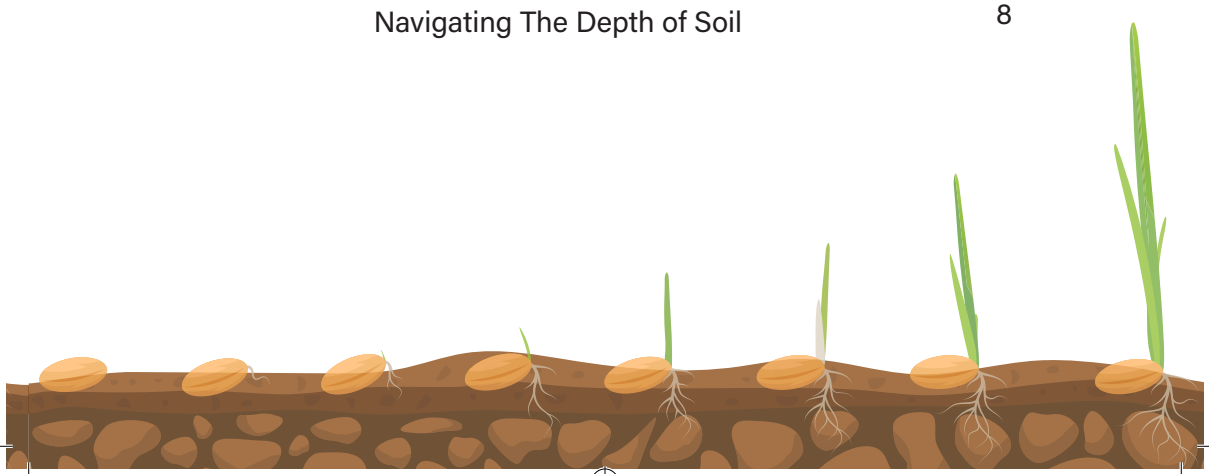

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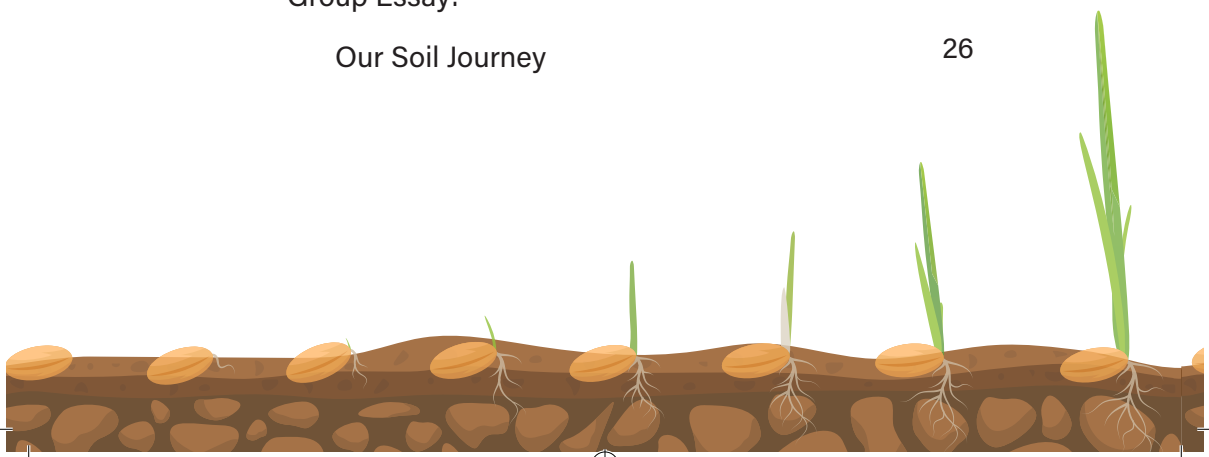

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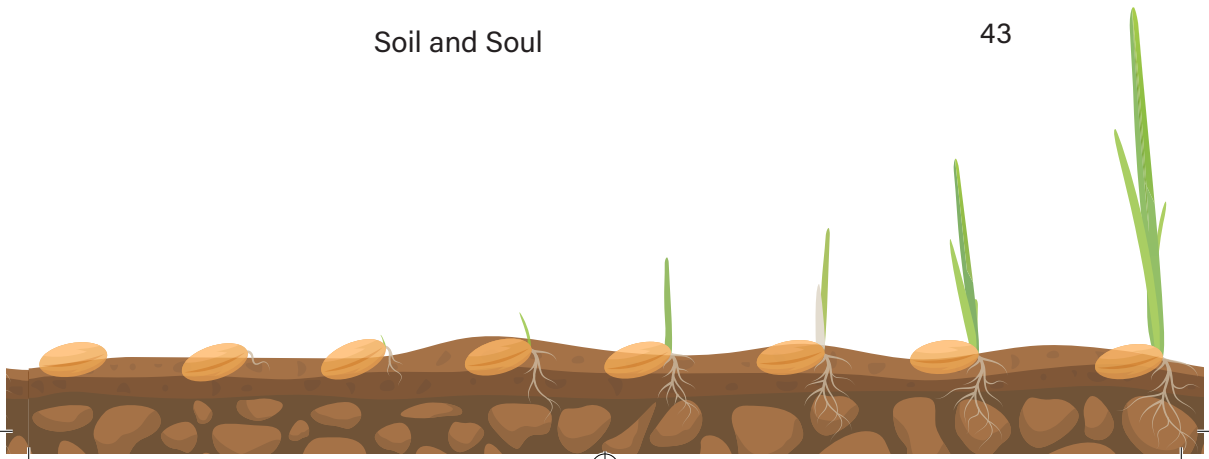

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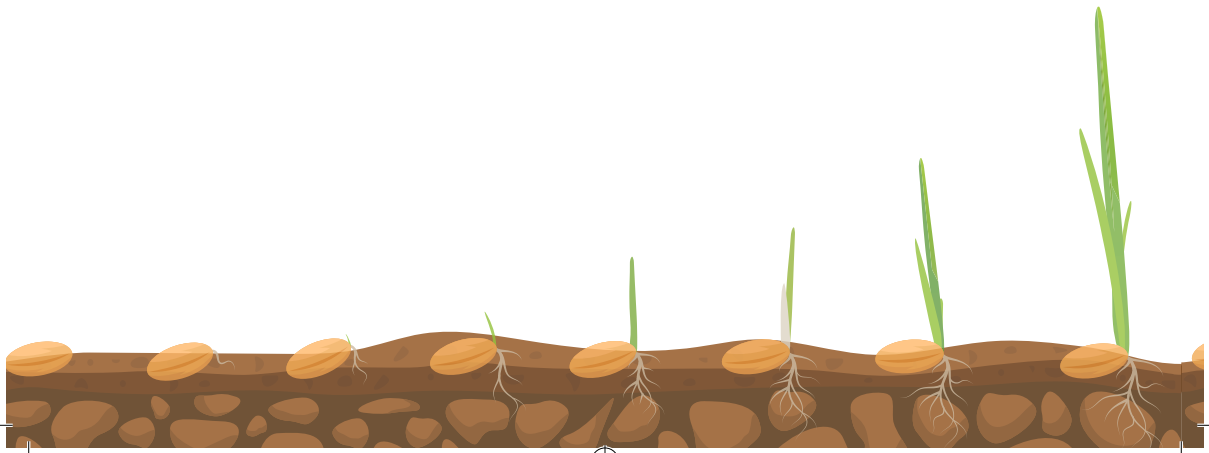

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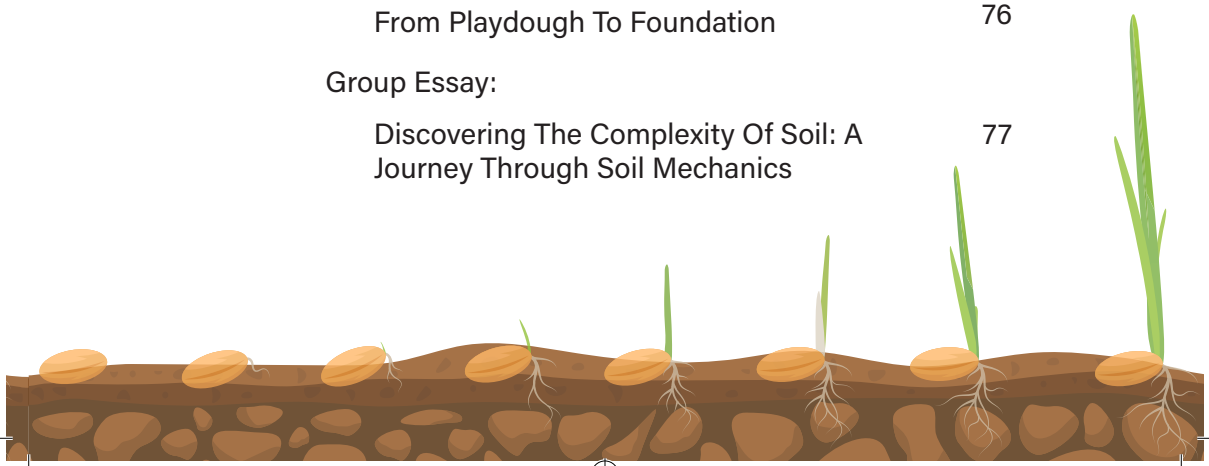

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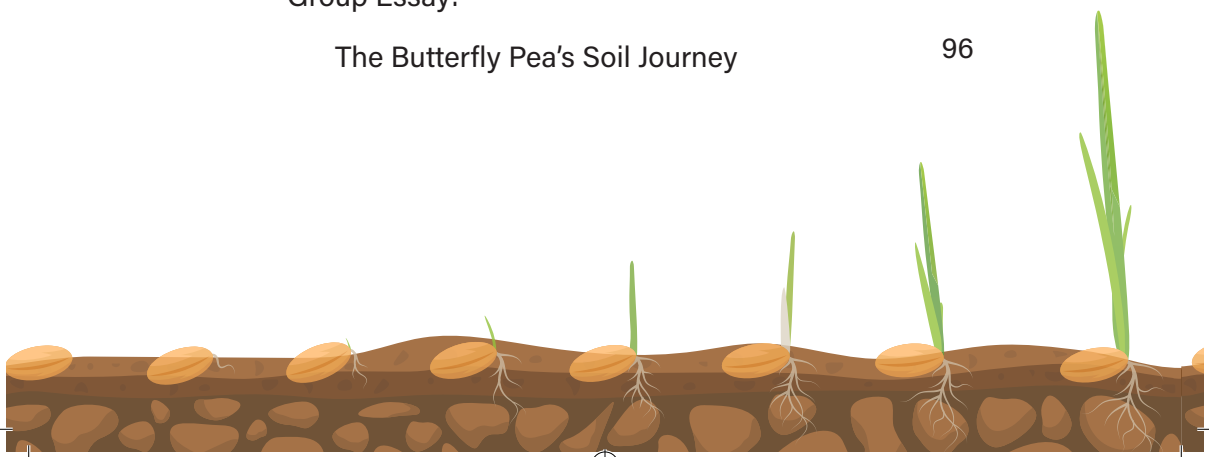

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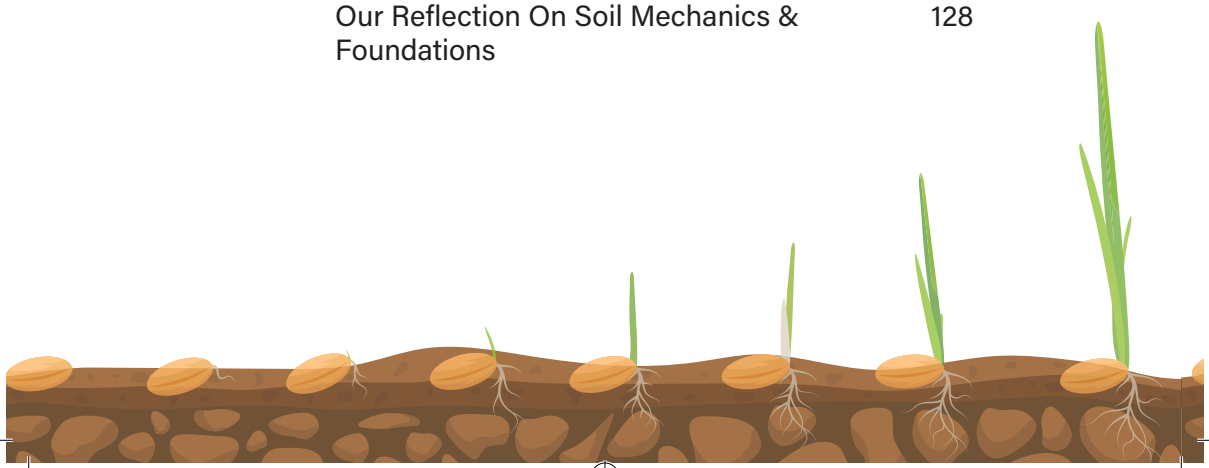

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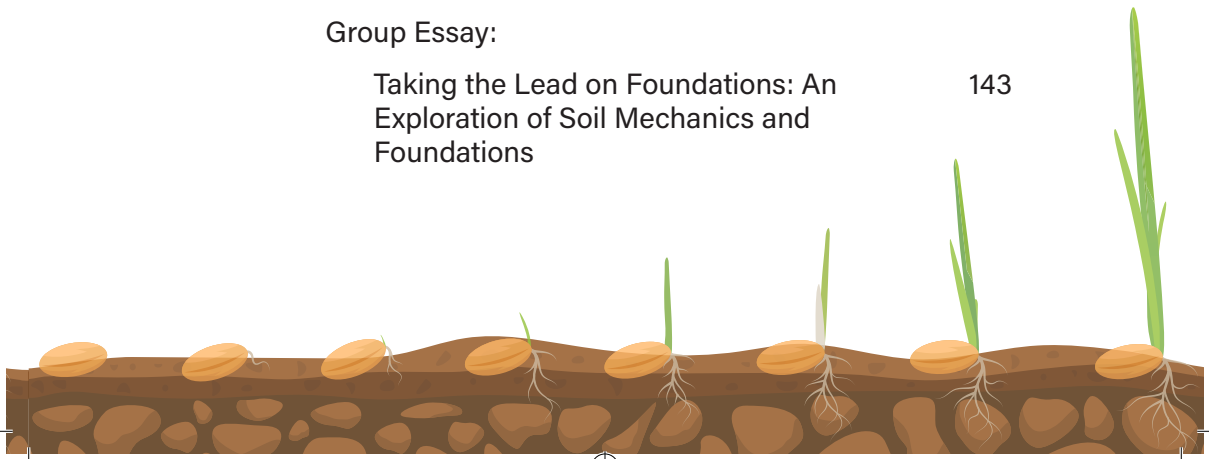

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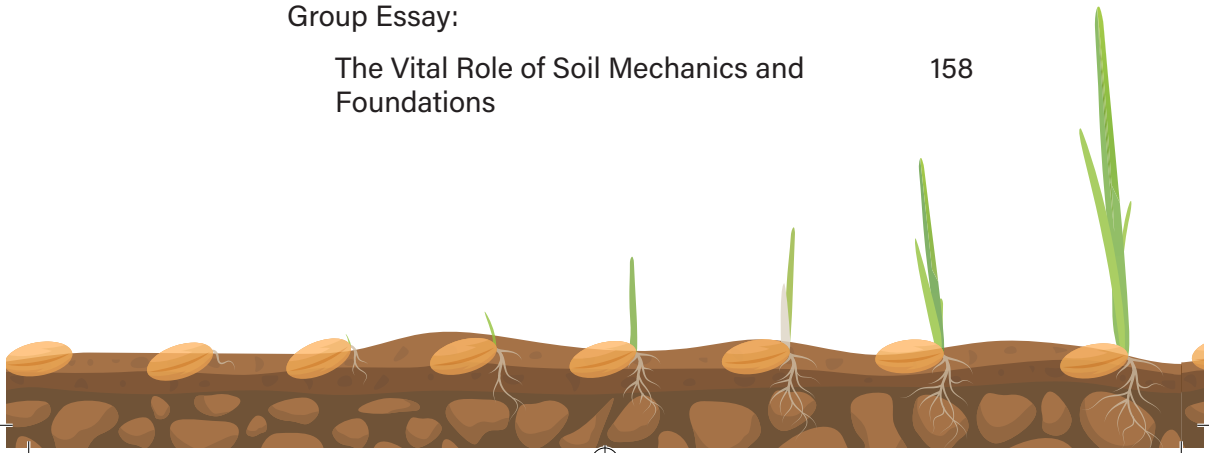

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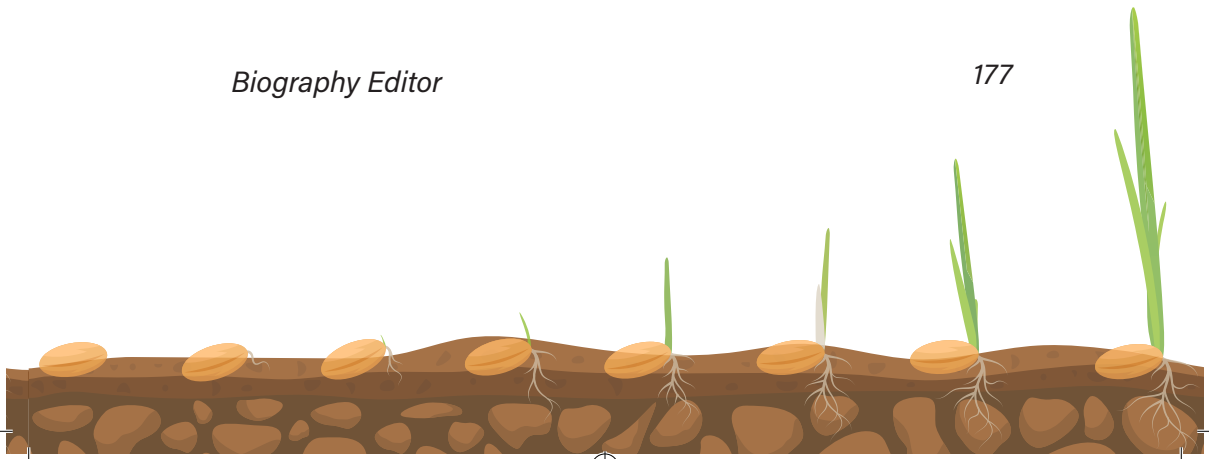
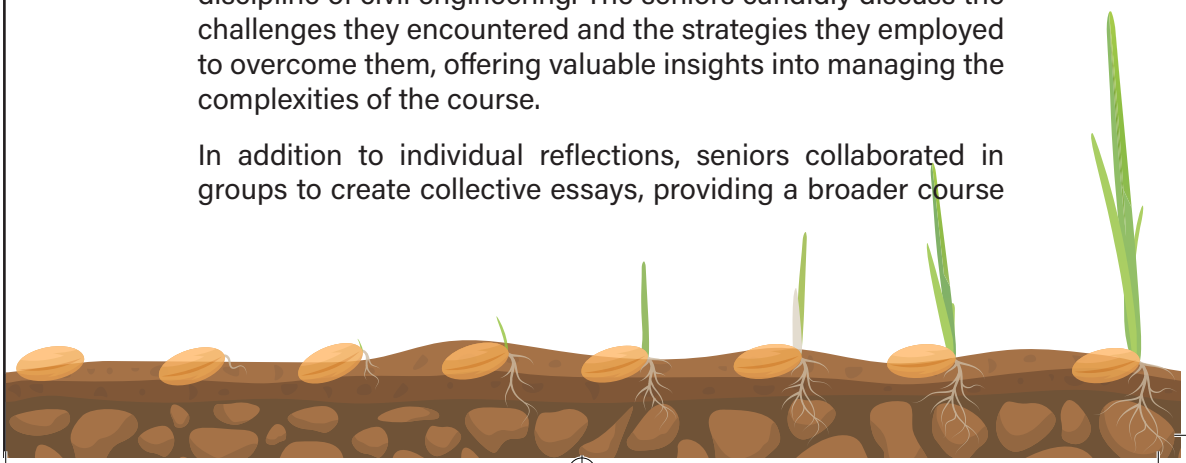


Preface

Soil mechanics is a vital branch of civil engineering that deals with understanding soil behavior and its applications as a construction material. On the other hand, foundations are the structural elements responsible for transferring the loads from buildings, bridges, and other constructions to the ground. Designing and constructing foundations requires a deep understanding of soil mechanics to ensure that these structures can support the loads and avoid issues like settlement, tilting, or collapse.

The primary objective of this book, ***Tales of Soils: Get Your Hands Dirty, but Make Yourself Brainy***, is to serve as a reference and guide for juniors entering the Soil Mechanics and Foundations course. Given that soil mechanics forms the bedrock of constructing stable and secure structures, future civil engineers must master these concepts. This book seeks to provide juniors with a solid foundation in these topics by bridging the gap between theoretical knowledge and real-world applications. Within this book, senior students share personal essays reflecting on their experiences and expectations from the Soil Mechanics and Foundations course. These essays delve into what students expected to learn, the knowledge they gained, and how this information is essential to the broader discipline of civil engineering. The seniors candidly discuss the challenges they encountered and the strategies they employed to overcome them, offering valuable insights into managing the complexities of the course.

In addition to individual reflections, seniors collaborated in groups to create collective essays, providing a broader course



perspective. These group essays emphasize the importance of soil mechanics and foundations in practical applications, discuss the challenges faced during group projects, and highlight effective strategies. Moreover, the group essays offer useful advice and tips tailored for juniors, equipping them with the knowledge needed to excel in the course. Following is the outline of the book:

Part 1: Individual Essays – This section features personal stories and reflections from the early part of the semester. The individual essays are designed to offer juniors insights into the personal challenges and successes that seniors experienced during the initial stages of the course. Through these narratives, juniors can learn from the strategies used by their predecessors to navigate the course effectively.

Part 2: Group Essay – This section focuses on experiences and lessons learned from group projects at the end of the semester. The group essays provide valuable guidance on teamwork, collaboration, and applying soil mechanics principles in real-world scenarios. Juniors can gain practical advice on how to succeed in group projects and understand the significance of soil mechanics and foundations in civil engineering.

Readers are encouraged to explore individual essays for personal perspectives on overcoming early challenges in the course. The group essays, on the other hand, offer collective wisdom on how to work effectively in teams, providing strategies for tackling the practical aspects of soil mechanics and foundations.

Happy reading

Editors,

Chiam Jing Tong . Daniel Zita . Muhammad Faqree Aiman Mahtar . Chee-Ming Chan . Salina Sani . Tuan Noor Hasanah Tuan Ismail .

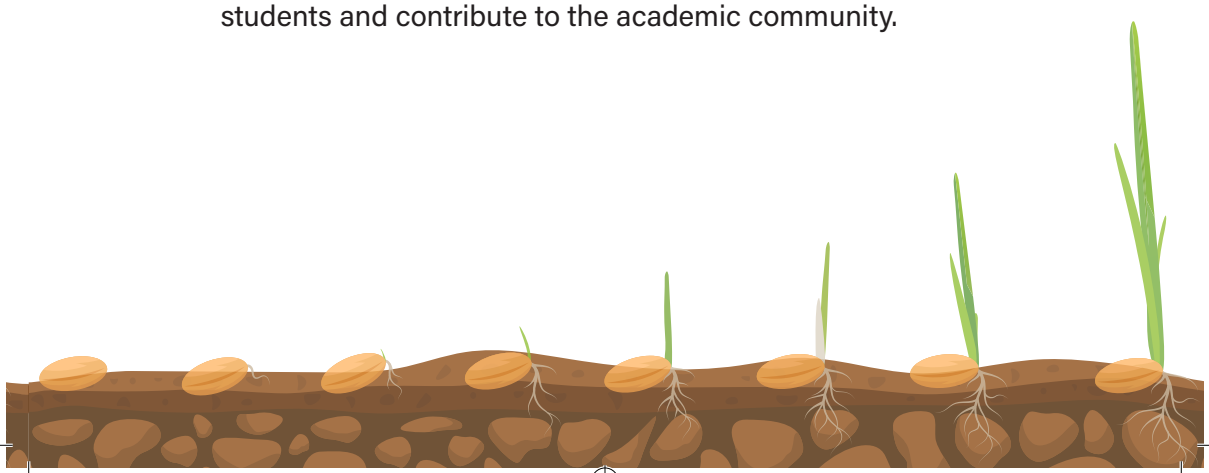
Acknowledgement

We would like to express our sincere gratitude to all those involved in the creation of this book. It is through the collective efforts and dedication of students, lecturers, Faculty management and staff as well as all other contributors that this project has come to fruition.

To our fellow students, your invaluable insights, hard work and enthusiasm have been instrumental in shaping the content of this book. Your contributions have enriched the text and made it relevant to the needs of your peers. We extend our deepest appreciation to our esteemed lecturers for their guidance, expertise and unwavering support. Your knowledge and mentorship have been invaluable in ensuring the accuracy and quality of the content.

Last but not least, we would like to express our heartfelt gratitude to our family and friends for their unwavering support, encouragement and love. Their belief in us has been our constant source of motivation.

Thank you all for your dedication and commitment. We hope that this book will serve as a valuable resource for future UTHM students and contribute to the academic community.



SECTION 1
GROUP 1-RHINOCEROS
Individual Essays

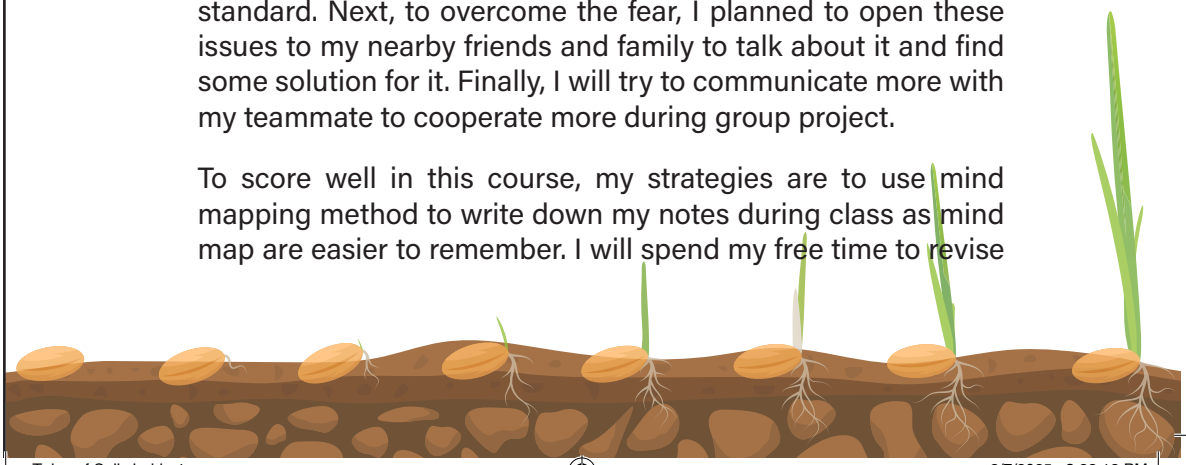
Me, My Soil and I

CHAI FEY LOONG

For this subject, I expect to learn more about soil mechanic and the property of soil. The theory of soil and variety of soil type that exist such as laterite, dry soil and clay soil. I also would like to improve my communication skills among students to overcome my fear in class. This class will be useful to me as a Civil Engineering Technologies. Because soil mechanics knowledge is important to have as it will be proven useful in my future field work and career. This subject will help me identify the difference of soil to construct a building soon. Furthermore, as my family job scope is aligned with soil work, this subject will help me identify suitable soil to use.

One of the main challenges that I may encounter is the obvious language barrier between me and the class as I may not catching up the pace in class. Other than that, the pressure that I felt during test or fear for the incoming exam may affect my consciousness during class. The last challenge that I fear is the uncooperative teammates during group project. My step to overcome these challenges is to try catch up to the lecturer standard. Next, to overcome the fear, I planned to open these issues to my nearby friends and family to talk about it and find some solution for it. Finally, I will try to communicate more with my teammate to cooperate more during group project.

To score well in this course, my strategies are to use mind mapping method to write down my notes during class as mind map are easier to remember. I will spend my free time to revise



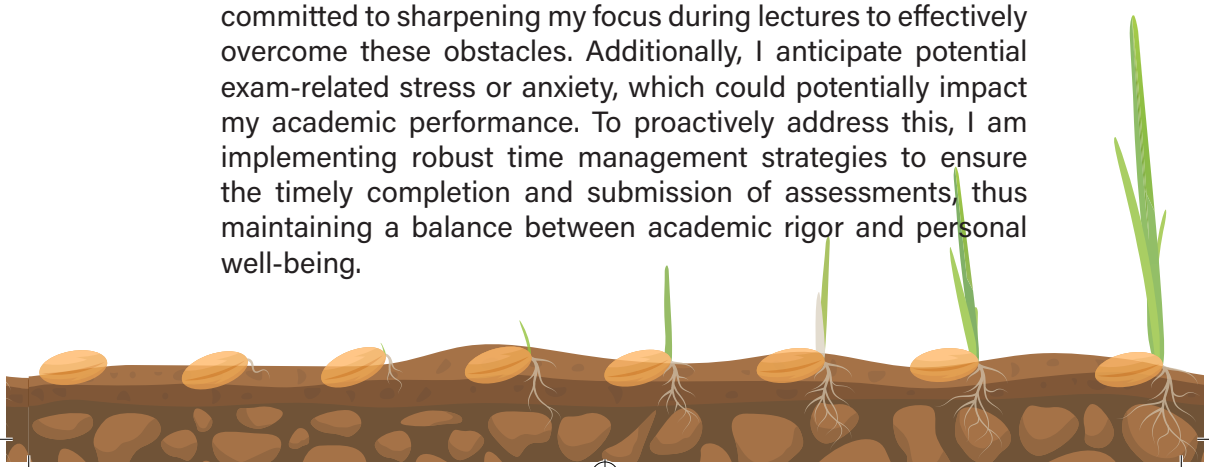
Do-Re-Me-Fa -Soil

KOH YEE FEI

I have always thought that the creation of mother nature is quite fascinating. Being blessed in a world rich with nature, I occasionally curious on the soil itself. "How is soil, pebbles, the rocks being form?", "Why are there rocks with different appearances?", those type of questions will just suddenly pop out of nowhere. Enrolling in the Soil Mechanics and Foundation (BNP 20903) course presents an exciting opportunity for me to delve into the intricacies of soil properties and behavior, gaining a deep understanding of its vital role in the environment. I am eager to explore the diverse types of foundations suitable for varying soil conditions, recognizing their critical importance in ensuring the structural safety and stability of buildings and infrastructure.

This course carries immense significance as it equips me with the essential knowledge and skills required for designing robust foundations capable of withstanding intended loads without succumbing to failures or settlement issues. A thorough grasp of soil mechanics not only enhances my academic prowess but also significantly boosts my prospects in securing employment within this specialized field, making me a valuable asset in the industry.

While I am prepared to face the challenges associated with grasping complex concepts and adapting quickly, I am committed to sharpening my focus during lectures to effectively overcome these obstacles. Additionally, I anticipate potential exam-related stress or anxiety, which could potentially impact my academic performance. To proactively address this, I am implementing robust time management strategies to ensure the timely completion and submission of assessments, thus maintaining a balance between academic rigor and personal well-being.



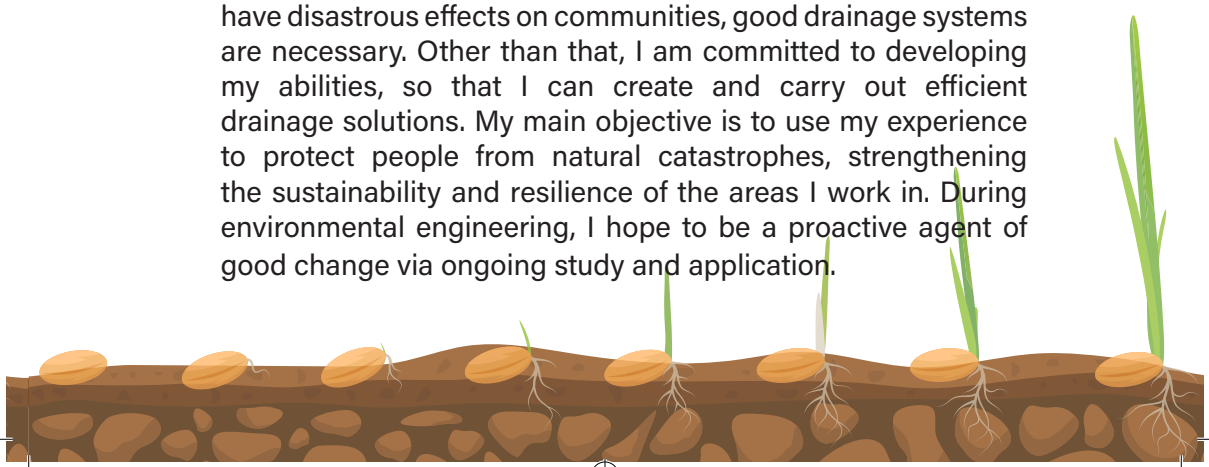
Soil and Me

NURLISA MOHAMAD RUZLI

My name is Nurlisa Binti Mohamad Ruzli, and I am currently enrolled at the University Tun Hussein Onn (UTHM) in the Bachelor of Civil Engineering Technology Environment with Honors. Throughout my academic career, I have thoroughly investigated soil and as I go through the complexity of soil in my education, I am becoming more aware of how important soil is in a field of engineering and environmental situations. I get a deeper understanding of soil, preparing me for my future career aspirations. My goal is to not only understand soil's complexities but also to apply this understanding to solve problems in the actual world.

In the field of construction, I am aware of how important good soil is to maintain a structural building. My goal is to identify the base material that is most suited for strong and durable constructions. Through the identification and comprehension of these soil properties reducing the likelihood of structural failures and protecting lives and assets is very important. Furthermore, I am motivated to carry out analyses of soil conditions before starting any building projects in order to anticipate any risks and guarantee a safe working environment for all parties.

Beyond building, I have a keen understanding of how important soil is to reduce environmental concerns, especially in cities. In order to control stormwater runoff and avoid floods, which may have disastrous effects on communities, good drainage systems are necessary. Other than that, I am committed to developing my abilities, so that I can create and carry out efficient drainage solutions. My main objective is to use my experience to protect people from natural catastrophes, strengthening the sustainability and resilience of the areas I work in. During environmental engineering, I hope to be a proactive agent of good change via ongoing study and application.



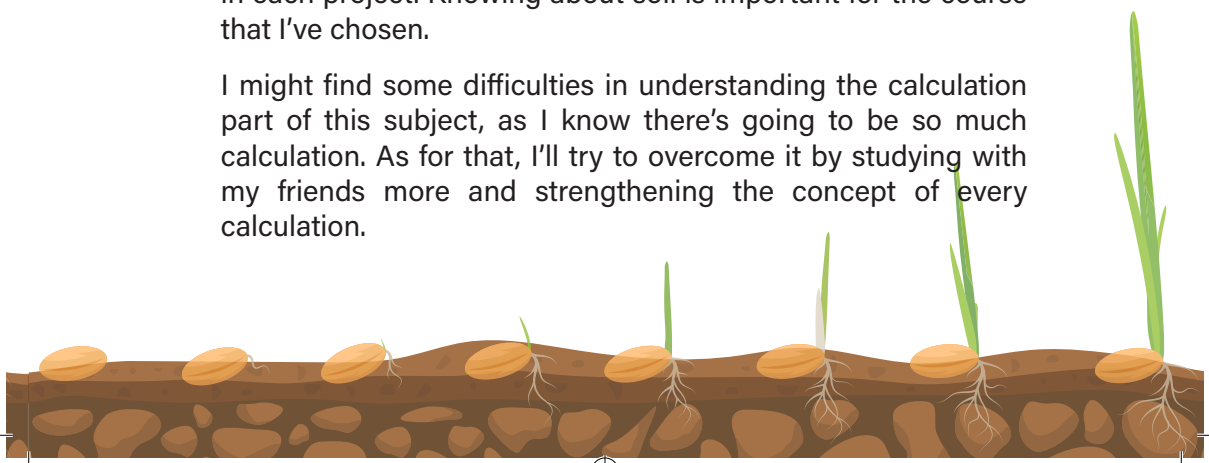
Soil and Life

NURRUL HIAYAHTUL NAZIRAH KAMAROSZAMAN

Soil in other human beings' eyes never becomes important, but not when it comes to me. Hello, my name is Nurrul Hidayahtul Nazirah, and I am well known as Zira. I am a secondyear student of civil engineering technology (environment) with honors at the University Tun Hussein Onn Malaysia. My educational background is a diploma in civil engineering. One of the reasons I chose civil engineering as my course to pursue my studies is because the course itself is full of knowledge about the earth that we live on. I've always found the world we live in to be full of something fascinating. Especially when it comes to nature. I feel like nature gives me so much comfort every time I'm in distress. That's why I choose to pursue my studies by exploring nature, which has never failed to give me peace and comfort.

If you ask me what I wanted to learn in this subject, I will say I want to learn how the soil can be so important as it needs to be reviewed in the first place before any construction works start. I also wanted to expand my knowledge about the various types of soil that exist in this world. How it exists and how it plays a role in construction work. Studying soil mechanics is important as it will relate a lot to the work field I'm going to face in the future after I finish my degree. What in civil engineering didn't include soil mechanics? None. It's either water, building, environment, or highway. Everything includes soil mechanics in each project. Knowing about soil is important for the course that I've chosen.

I might find some difficulties in understanding the calculation part of this subject, as I know there's going to be so much calculation. As for that, I'll try to overcome it by studying with my friends more and strengthening the concept of every calculation.



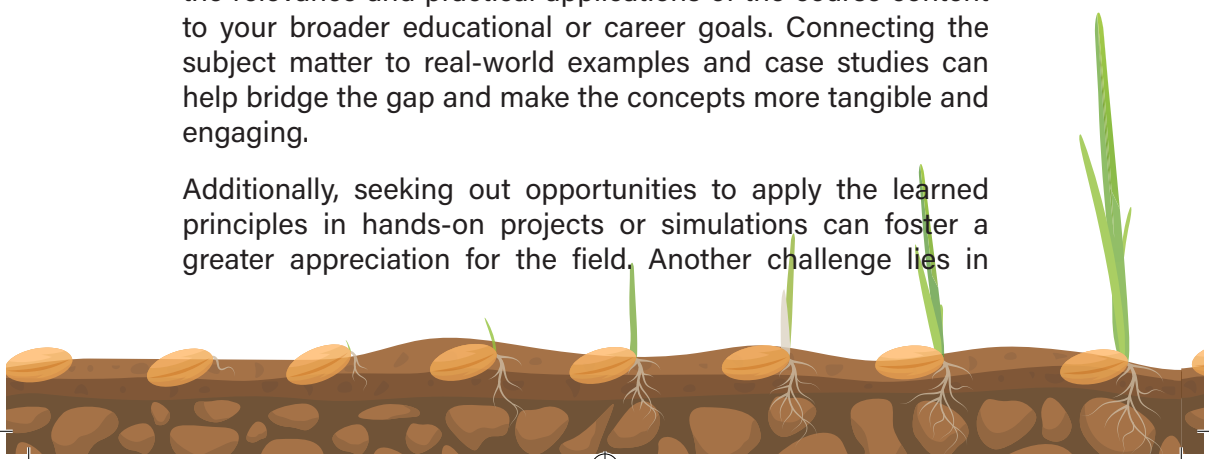
SECTION I
GROUP I-RHINOCEROS
Group Essay

Navigating The Depth of Soil

In the course of Soil Mechanics and Geotechnical Engineering, I have gained invaluable knowledge and skills that are essential for understanding the complex behavior of soils and their interactions with civil engineering structures. Through this course, I have learned how to analyze the properties of different soil types, including their shear strength, compressibility, and permeability, and how to apply this knowledge to the design and construction of foundations, slopes, and other geotechnical systems.

As a student, it can be challenging to grasp the complex concepts in a Soil Mechanics and Geotechnical Engineering course, especially if you don't have a natural interest or passion for the subject. The abstract nature of the material and the technical details involved can make it difficult to stay engaged and motivated. To overcome this challenge, it's crucial to find the relevance and practical applications of the course content to your broader educational or career goals. Connecting the subject matter to real-world examples and case studies can help bridge the gap and make the concepts more tangible and engaging.

Additionally, seeking out opportunities to apply the learned principles in hands-on projects or simulations can foster a greater appreciation for the field. Another challenge lies in



SECTION 1
GROUP 2-EAGLE
Individual Essays

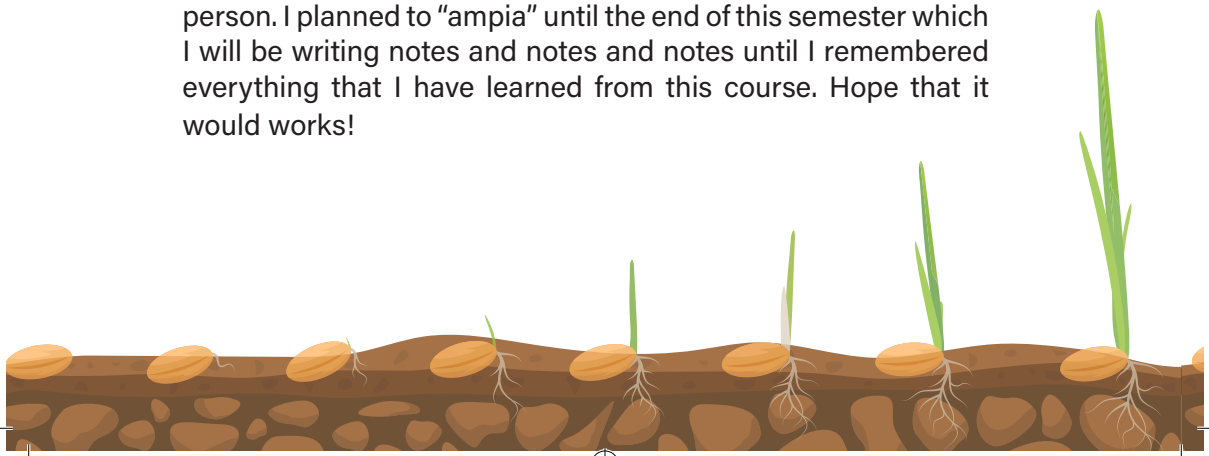
My 666 Journey to Soil

CHIAM JING TONG

Soil mechanics and foundation sound good for me as I'm originally interested to studying in environmental science, but I am here right now. Somehow, I heard that Prof Chan is very strict but from my experience in top secondary school, stricter teacher are the ones that put the most effort in their teaching. So, hope that I could learn more of Prof Chan.

I would expect that I can learn more about the different layers of the soil and the characteristics of it. It will be useful to me as I'm interested in environmental conservation which this course can help me to understand this planet better. From the students that took this course, I heard that they are having a hard time on their project which I think it would be a good way to help me growth better and better. In order to overcome this challenge, I will keep up the progress of our project in time to prevent any delay. At the same time, there are more unpredictable challenges in the future, and I hope that it won't happen.

I will try my best to overcome it because it's the path for me to reach a good grade and a chance to educate me to be a better person. I planned to "ampia" until the end of this semester which I will be writing notes and notes and notes until I remembered everything that I have learned from this course. Hope that it would works!



Soil and Self-discovery

NURAIN MOHD KHAIRI

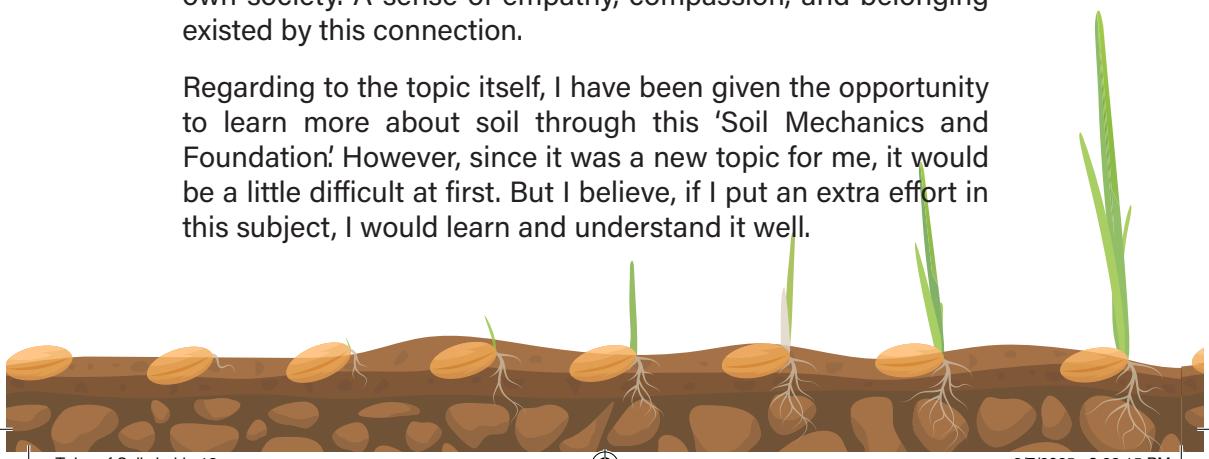
We frequently overlook one of the elements under our feet which is soil. As I have grown older, now it became much clearer the connection between soil and self. On the first look, soil is just unremarkable. Only been seen as a dirt and nothing more. But if you dig a little deeper, as they said, you will find something much more interesting as if a new universe of life beneath your feet. Soil is just not only a medium for the growth of plants, but it is also a complex ecosystem full of microspecies that all working together in a delicate balance. This diversity also mirrors the richness within us.

Like soil, we are also an ecosystem made up by various elements. Soil needs nutrients to flourish just like us. We need our experienced, connections and knowledge to help our own growth. Our roots go far down into our past including the good and bad thing that will help us in life.

Soil also teaches us to be resilient. Soil shows by how it supports life despite weather, erosion and human activities. Similar to this, we also face challenges and difficulties along the way. But that is how and what make us adapt and grow from these experiences.

Soil reminds us about connection. Just as every organism in soil plays a role in the ecosystem, all individuals also take part in our own society. A sense of empathy, compassion, and belonging existed by this connection.

Regarding to the topic itself, I have been given the opportunity to learn more about soil through this 'Soil Mechanics and Foundation.' However, since it was a new topic for me, it would be a little difficult at first. But I believe, if I put an extra effort in this subject, I would learn and understand it well.



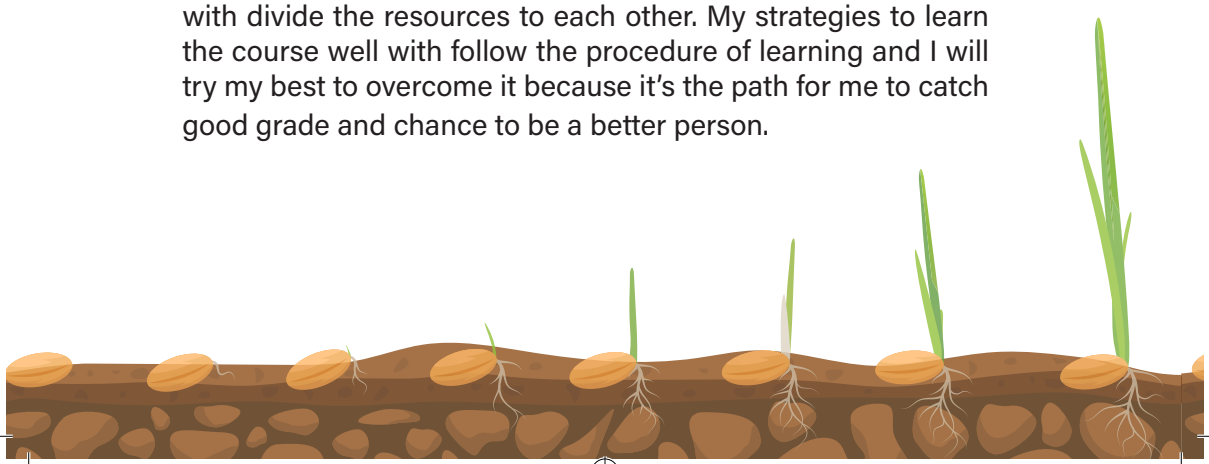
My Soil Story

MUHAMMAD AKMAL JALUDIN

Soil mechanics and foundation for me its sound like two subjects combine from my previous education diploma polytechnic. What will I learn? in my opinion I will be deeper about soil which mean type of soil when in site project, how to build gabion wall at side of the road and water from runoff will pump to foundation to oxidation. I will learn into the properties of soil, its behaviour under various conditions, and how to design and construct foundations that can support structures effectively.

Regarding my interest in water management and inspection, knowledge of soil mechanics and foundations is particularly relevant. Understanding how soil interacts with water, how water affects soil stability, and how foundations can mitigate potential issues related to water infiltration are all essential aspects. This subject is useful for my educational because it's related to my future job as water inspection (SPAN) or officer at water management Pahang (PAIP) at my hometown.

This subject has challenges for me to learn cause lack of understanding English and confuse to find resources about this subject at library. I will try to understand harder when Prof Chan is teaching in front class by write-downs the keyword/point highlight to repeat learning at midnight and will make group or invite friend to go library study together will make its easier with divide the resources to each other. My strategies to learn the course well with follow the procedure of learning and I will try my best to overcome it because it's the path for me to catch good grade and chance to be a better person.



Earth Lithosphere

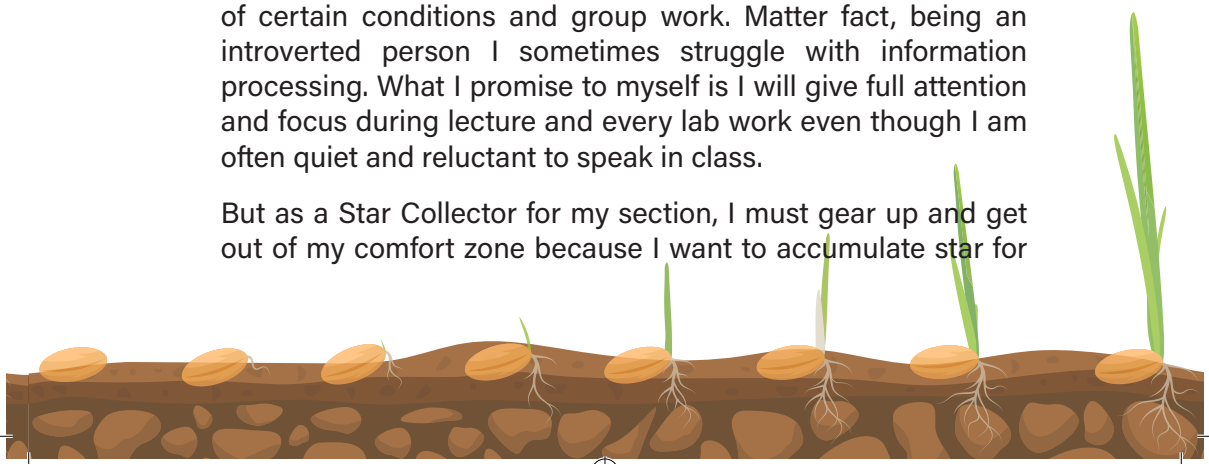
PUTERI NURUL IXORA MOHD HADZAL

Growing up, I always thought that soil is like an outer skin like epidermis and our body act as our planet. As a human, I think that soil is crucial to life on earth as much as water. It's like a barrier that separates rocks from the atmosphere. Although sometimes they are dismissed as dirt or mud which I step on every day. As soil is nature heartbeat, it never ceases to amaze me to ever had doubt at the type and the qualities of soils present on the Earth. Not that alone, they offer various habitats to the different human settlements, animals and plant species at different latitudinal, longitudinal and altitudinal locations. This praise of soil is unending and should remain so for ever.

My first impression and thoughts on Soil Mechanics and Foundations is by the name of "Mechanics" and "Foundations" of course one thing that pop up in my mind is I think I will learn about the mechanical behaviour of soil, their properties and how it is relates to civil engineering. In order for better understanding, in-site and laboratory testing will be performed to simulate its behaviour. Besides I'm going to studies how to construct foundation that can provides support to various kind of structures effectively.

This subject seems fun to me, but it may have its own challenges such as the complexity of the theoretical explanation, the difficulty of the experimental methods and the uncertainty of certain conditions and group work. Matter fact, being an introverted person I sometimes struggle with information processing. What I promise to myself is I will give full attention and focus during lecture and every lab work even though I am often quiet and reluctant to speak in class.

But as a Star Collector for my section, I must gear up and get out of my comfort zone because I want to accumulate star for



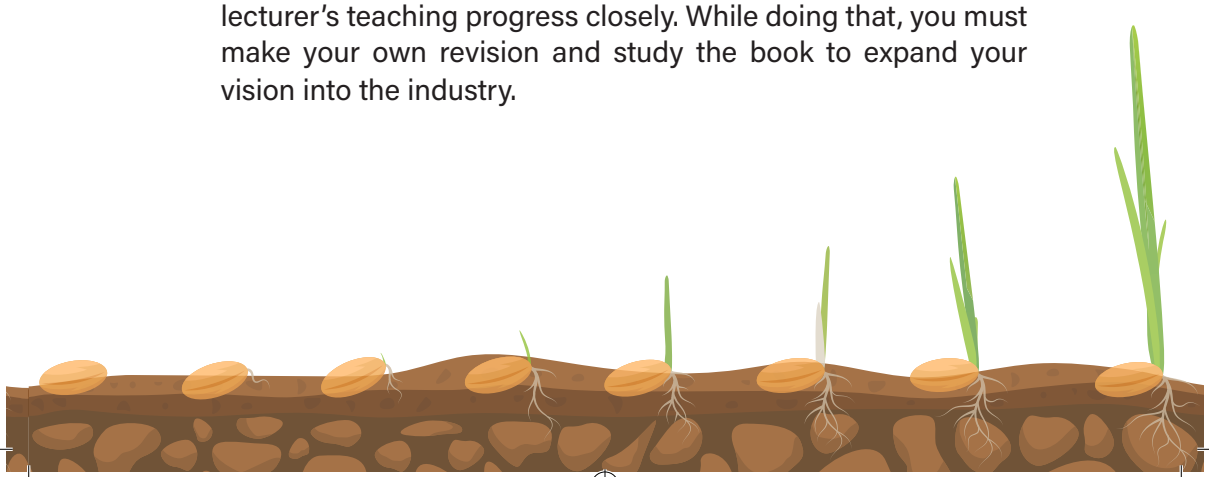
SECTION 1
GROUP 2-EAGLE
Group Essay

The Eagle Soars: Our Soil Story

For this semester, we have learned many things about the types of soil and how they formed. We also more understand about the industrial solutions to each problem and the causes of each effect. This knowledge can help us through the future career path and help us adapt more well to the industry. At the same time, we also can perform better than others and not limit our future development.

At the start of the semester, our group is working like headless flies and does not have clear objectives and direction to fight for. This is due to the changing of leader every week and the progress is not going continuously. We also faced the challenge of looking for the information we need on the internet which is crucial for us to make progress in our project. We overcame these challenges by appointing a leader for our project which gives us a clear objective and responsibility for each member. We also help each other to look for the information that they can't find and help them through their struggle.

To learn well in this subject, it is crucial to study and follow the lecturer's teaching progress closely. While doing that, you must make your own revision and study the book to expand your vision into the industry.



SECTION 1
GROUP 3-GOAT
Individual Essays

My Soil Journey

MUHAMMAD ADAM MOHD ROSLI

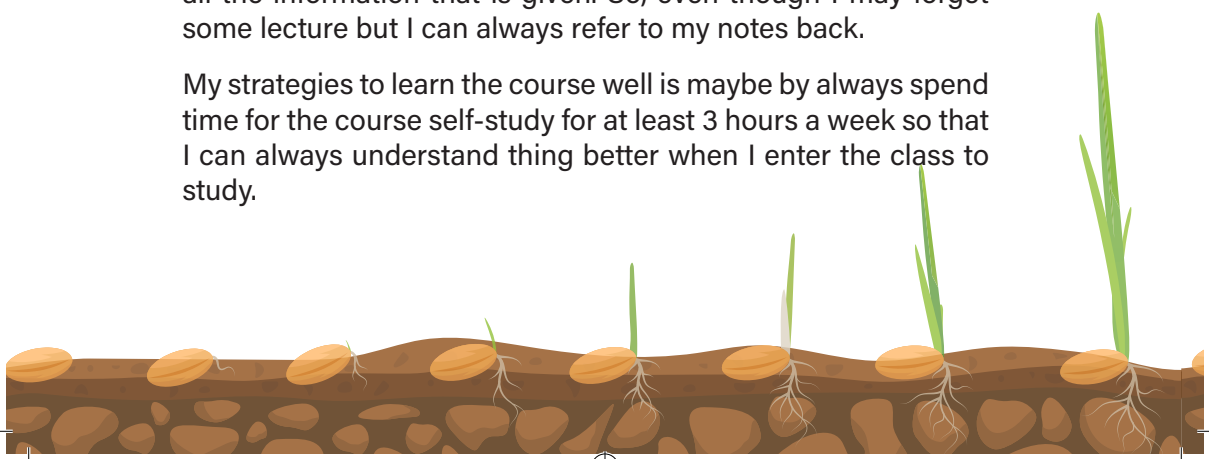
Based on the name of this course, soil mechanics and foundation, I would expect to learn what type of soil I can use in construction, how the soil is form and where does the soil come from. How many kinds of soil is there in the world. How can I use the soil the most efficient way and get to know many kinds of soil properties. So, I would expect the lecturer of this course must have prepare all kind of amazing lecture to give to his/her student.

It is important for me to learn this course so in the future I can know the right type of soil I will use in the construction. With the right type of soil, I can ensure the foundation being use is stable for the construction.

The obstacle I may have to challenge is to memorize all kind of soil, the behaviour of the soil and how I can apply the knowledge that I learn through this course to real life experiences.

The plan I have in mind to overcome the challenges is by always taking notes when my lecturer is teaching so I can write down all the information that is given. So, even though I may forget some lecture but I can always refer to my notes back.

My strategies to learn the course well is maybe by always spend time for the course self-study for at least 3 hours a week so that I can always understand thing better when I enter the class to study.



My Curiosity

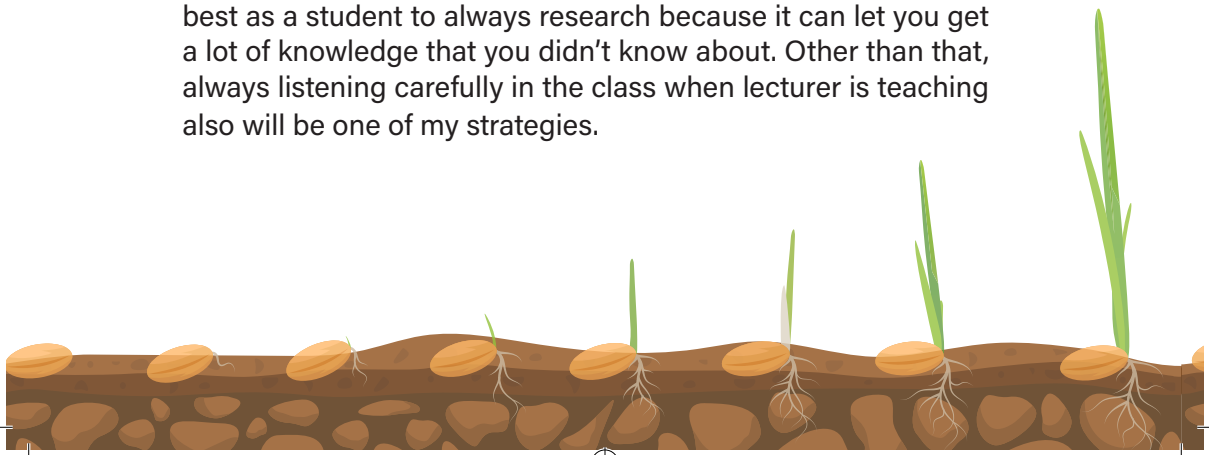
LEE XIN TIAN

When I was young, I was always curious about how a building could be built on the earth and I was wondering how the foundation can support the whole building. Fate has made me choose my course and I have been destined to learn the course called "Soil Mechanics and Foundations". I was expecting that I could learn the knowledge about different types of soil and how the soil can support the foundation which I was wondering about when I was young.

The moment that I found out that I would be a civil engineering student, I decided that I wanted to be an environmental engineer full of a lot of knowledge. So, I knew that every course that I would be learning in university would be important for me. While this course will be the same. I trust that if I have learned it, I could get a lot of knowledge about soil and foundation which could help me in my future when I am working.

I am always curious about a lot of things, but I am not a clever person. While this course needs students to have a good understanding and good memory. This might be hard for me to learn this course and I think it will be stressful for me. The only way that I can do this is to be diligent and always ask when not understand.

Since I am always curious about something, hence I think doing research will be a good strategy for learning. I think it will be best as a student to always research because it can let you get a lot of knowledge that you didn't know about. Other than that, always listening carefully in the class when lecturer is teaching also will be one of my strategies.



Digging Deeper: My Personal Journey with Soil

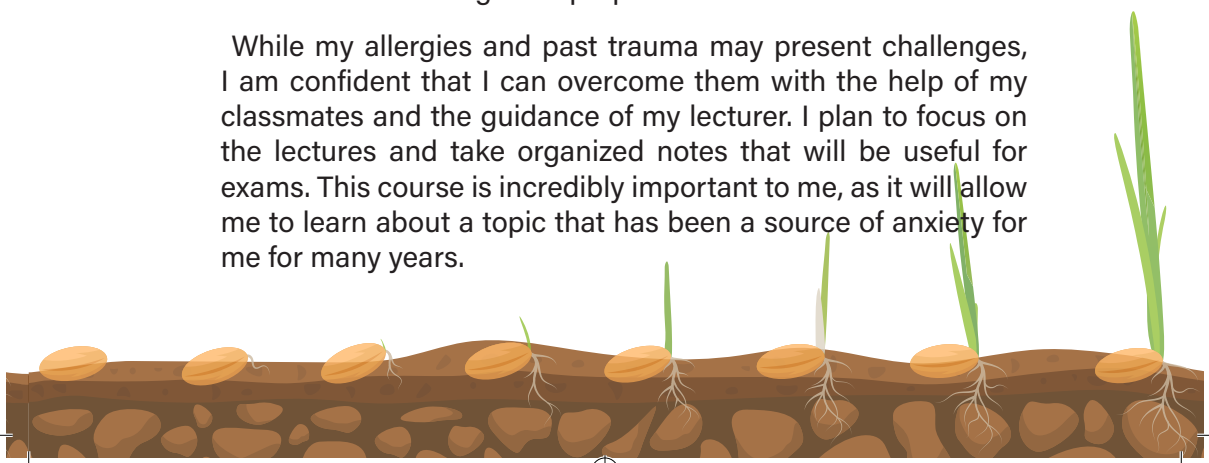
YALINI A/P CHANDRAN

Soil, which is the thin layer of material covering the Earth's surface, is a vital resource that provides the foundation for many of the essential components of our daily lives. The role of soil in our daily lives is incredibly important.

Unfortunately, my personal experience has led me to view soil in a negative light. When I was just 9 years old, I loved playing with soil to create fun objects and animals. However, one day, I had a severe allergic reaction all over my hands. I was taken to the hospital, and the doctors told me that I was allergic to the bacteria found in soil. This traumatic event kept me away from soil for years, and I developed a fear of it. I have recently discovered that Soil Mechanics and Foundation Engineering are fields where I can learn about the properties and behaviour of soil, as well as how it interacts with structures.

Through this study, I will also be able to understand the design and analysis of foundations and structures that interact with soil. This knowledge is not only crucial for civil engineers, but it will also help me to change my negative perspective on soil. I am excited to take this course, as it will enable me to learn about soil in a more scientific and analytical way and gain a better understanding of its properties and functions.

While my allergies and past trauma may present challenges, I am confident that I can overcome them with the help of my classmates and the guidance of my lecturer. I plan to focus on the lectures and take organized notes that will be useful for exams. This course is incredibly important to me, as it will allow me to learn about a topic that has been a source of anxiety for me for many years.



SECTION 1
GROUP 4-LEOPARD
Individual Essays

My Expectation on Soil Mechanics

MUHAMMAD ZARUL ADHAM MUHAMMAD AZMI

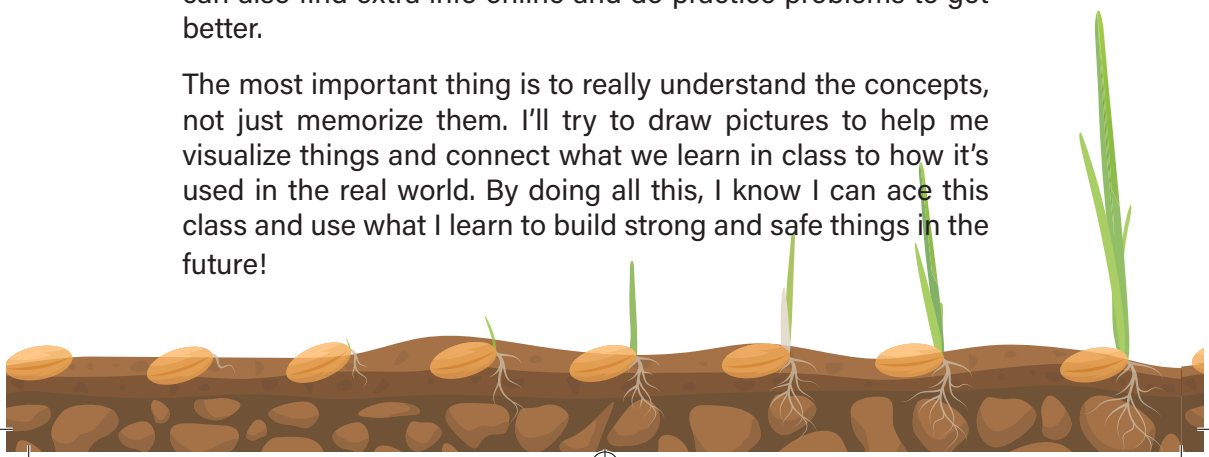
I'm excited to learn about soil mechanics. This class should teach me all about different types of dirt and how they act when things push on them or the weather changes. We'll learn about things like how much water is in the soil, how big the dirt particles are, and how strong the soil is.

Knowing about soil is important because it helps build safe stuff. Imagine building a house, we need to know how strong the ground is to hold it up. Soil mechanics will help me design things like foundations, walls, and anything else that touches the dirt.

There might be some tough parts though. Soil mechanics uses math and science, so it could get tricky. I might need some help from the teacher or classmates to understand everything.

To make sure I learn everything, I'm going to pay attention in class, ask questions, and maybe even study with classmates. I can also find extra info online and do practice problems to get better.

The most important thing is to really understand the concepts, not just memorize them. I'll try to draw pictures to help me visualize things and connect what we learn in class to how it's used in the real world. By doing all this, I know I can ace this class and use what I learn to build strong and safe things in the future!



First Experience with Soil

MUHAMMAD AMIRUL HAKIM ABDUL RAHIM

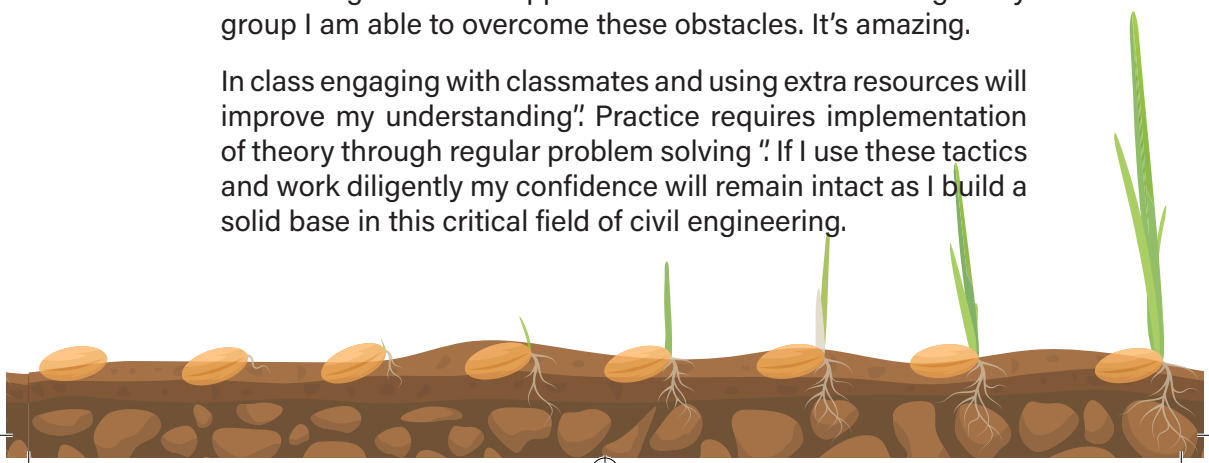
The ground that we walk upon is not just a layer of dirt, but a rich and intricate world that lies beneath our feet waiting to be discovered. Starting this Soil Mechanics and Foundations course, I am inspired by my desire to learn more about the ground I will design on.

In this course, I will learn the basic principles of soil behaviour and the relationship between construction and soil that allows us to build strong and steady structures. I will be able to study the soil's properties and classification and their correlation into foundation designs. Then, with soil stability and bearing capacity analysis, I would be able to organic building and the safety and durability of construction.

The soil mechanics and foundation journey on which I am embarking is an intellectual journey that will be at once exciting and difficult. The ground on which we walk is filled with far more complexity than the common experience suggests. There is a symphony of forces acting on the soil that influence its movements and vibrations just as much as any structure built over it and around it.

While navigating the intricate web of soil behaviour and foundation design is difficult, I take pride in it. It is necessary to study with concentration while the course will be intellectually stimulating. With the support of the course and a strong study group I am able to overcome these obstacles. It's amazing.

In class engaging with classmates and using extra resources will improve my understanding". Practice requires implementation of theory through regular problem solving ". If I use these tactics and work diligently my confidence will remain intact as I build a solid base in this critical field of civil engineering.



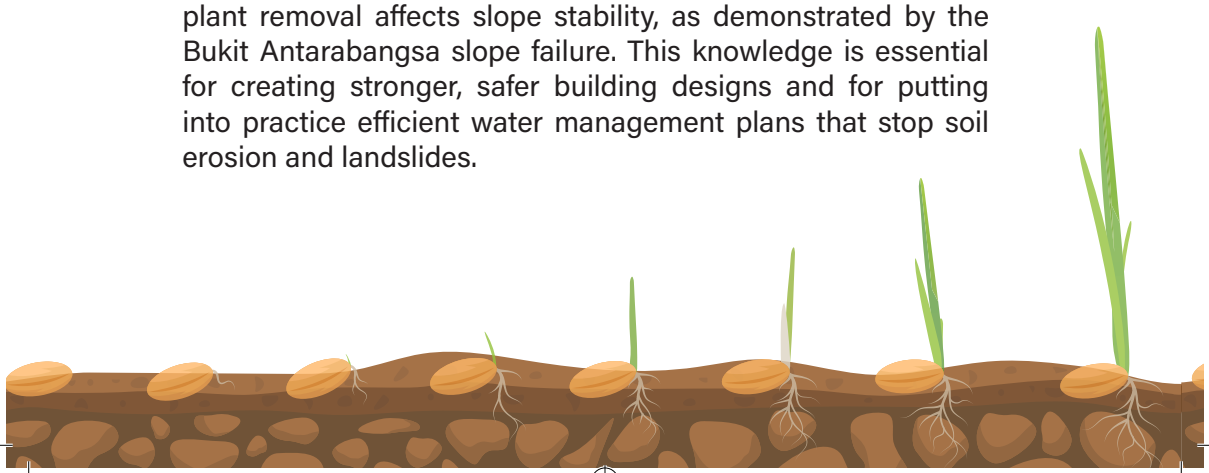
SECTION 1
GROUP 4-LEOPARD
Group Essay

Navigating the Complexities of Soil Mechanics

The soil mechanics course has completely changed the way I think about things. At first, I thought of soil as just the earth under our feet. But this course also revealed the dynamic and complicated nature of soil, particularly its behaviour under different situations and its important role in environmental sustainability and construction.

The significance of soil qualities like cohesion, permeability, and shear strength is among the most important things I learnt. These characteristics are critical in establishing the overall safety of structures, the bearing capacity of foundations, and the stability of slopes. It has been essential to comprehend the concepts of effective stress and the effect of water content on soil stability, as well as the mechanics underlying soil behaviour.

This information is extremely helpful in both personal and business settings. It gives me the professional tools I need to evaluate and reduce soil-related risks in building projects. For example, I now know how added weight from building and plant removal affects slope stability, as demonstrated by the Bukit Antarabangsa slope failure. This knowledge is essential for creating stronger, safer building designs and for putting into practice efficient water management plans that stop soil erosion and landslides.



Expectations in Learning Soil Mechanics & Foundations

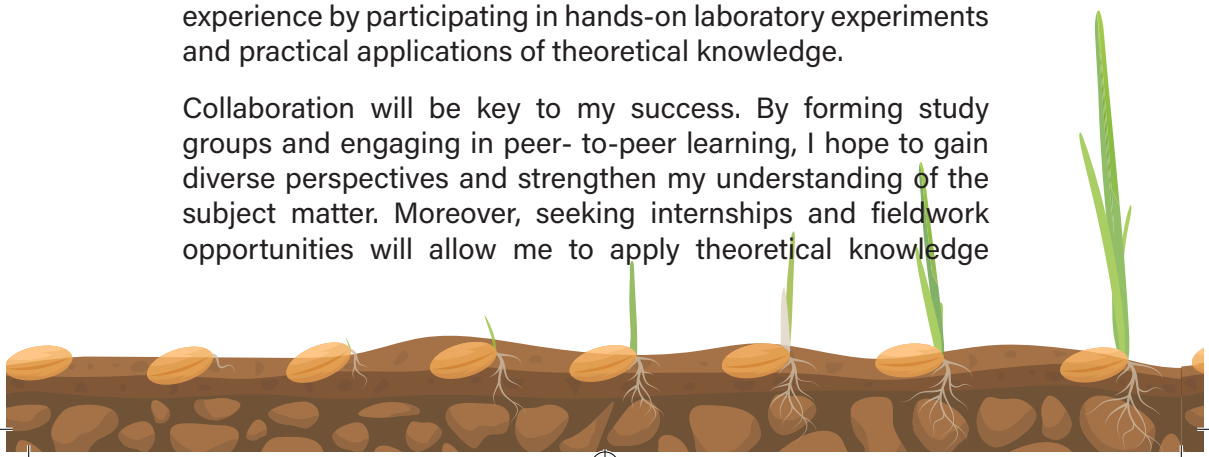
FARISHA NADZIRAH ABD MALEK

I step into the world of Soil Mechanics & Foundations, I anticipate a fascinating exploration into the unseen world beneath our feet. This course promises to unravel the mysteries of soil behaviour and its crucial role in civil engineering. For me, understanding soil is like discovering the hidden blueprint of our structures. It's not just about learning, it's about mastering the key to building stability and safety. Aspiring to become a civil engineer, I recognize the immense importance of grasping soil mechanics.

However, I know there will be challenges along the way. From complex concepts to daunting mathematical equations, navigating through the course material might seem overwhelming at times. Yet, I am determined to overcome these obstacles.

To tackle the challenges head-on, I have devised a strategy. I will maintain a structured study schedule, allocating specific time slots for lectures, assignments, and self-study. Additionally, I will actively engage with professors and peers, seeking clarification whenever needed. Furthermore, I aim to enhance my learning experience by participating in hands-on laboratory experiments and practical applications of theoretical knowledge.

Collaboration will be key to my success. By forming study groups and engaging in peer- to-peer learning, I hope to gain diverse perspectives and strengthen my understanding of the subject matter. Moreover, seeking internships and fieldwork opportunities will allow me to apply theoretical knowledge



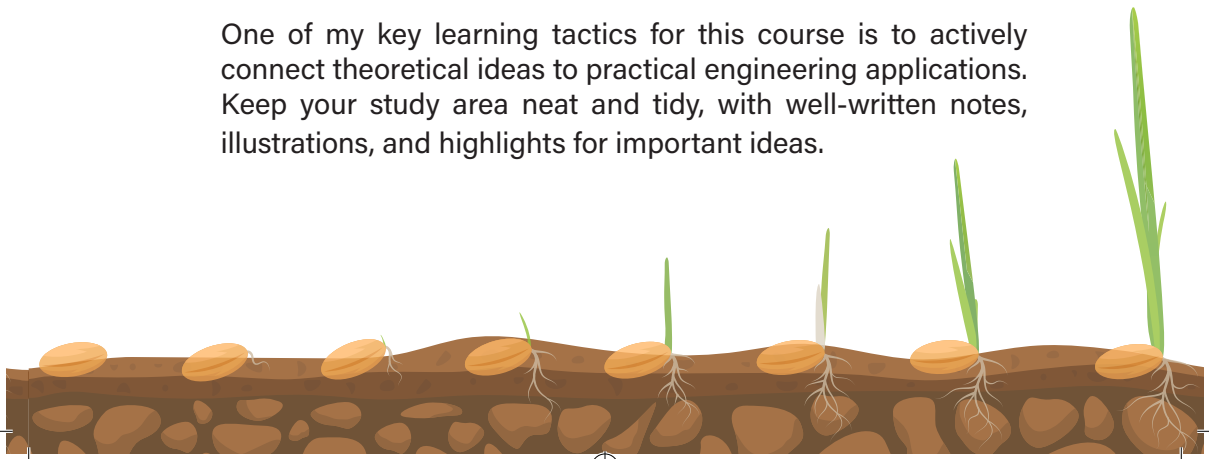
Me and Soil

NIK SYAMIMI ATHIRAH NIK ZAIDI

My name is Nik Syamimi Athirah Binti Nik Zaidi. I continuously pondering how intense the subject soil mechanics and establishment since my seniors as of now taken the subject. Most of them said that this subject a bit intense since of the theory and calculation.

Be that as it may, when I go to the to begin with course conducted by Prof. Chan Chee Ming it was astonishing and astounding. I will discover how this understanding translates into useful solutions for issues involving civil engineering. This covers the design of foundations, investigation of slope stability, construction of earth retaining walls, and remediation of problematic soils. It becomes essential to have practical expertise with laboratory testing. I also will discover how to assess the shear strength, compaction characteristics, and grain size distribution of soil. It is necessary for the design of stable and safe constructions, such as highways, bridges, buildings, and dams. As a naturally occurring substance, soil is unpredictable. The weather, past land use, and the availability of groundwater are some of the variables that might affect its behaviour. How I get over this is to active participation in lab sessions, lectures, and discussions. Never be afraid to seek clarification on unclear issues. Work together with my friends or my groupmate to solve difficult issues, explain concepts to one another, and have discussions about concepts.

One of my key learning tactics for this course is to actively connect theoretical ideas to practical engineering applications. Keep your study area neat and tidy, with well-written notes, illustrations, and highlights for important ideas.

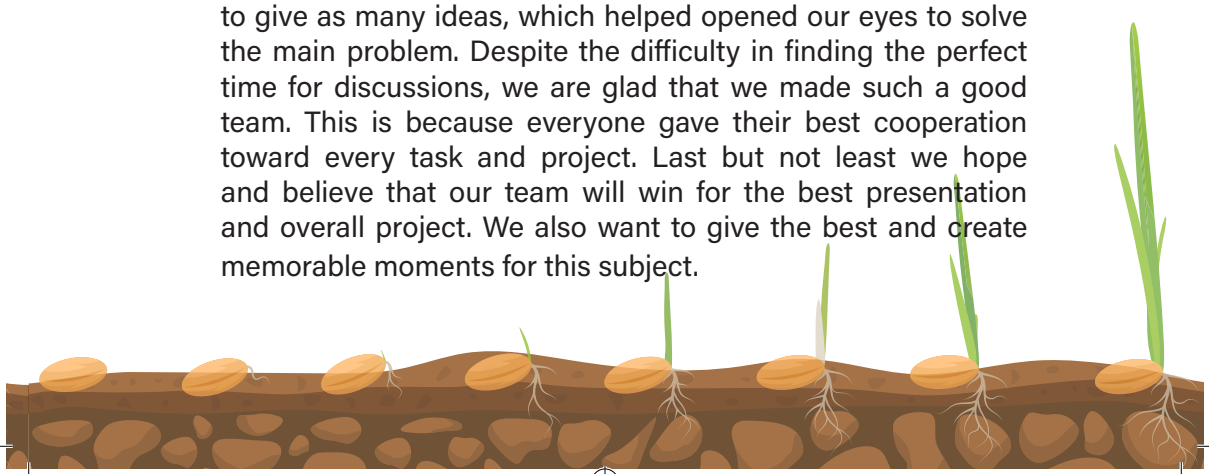


SECTION 1
GROUP 5-COBRA
Group Essay

Soil and Soul

First and foremost, soil just like air and water, is one of the world's most important natural resources. We learned that it has a lot of important functions that are essential for life. It not only helps us feed the world's population but also greatly contributes to the recycling of air, water, nutrients, and many more, ensuring that there will be basis life for future generations. Next, we also learned about soil behaviors and engineering application toward various situation which include determining the bearing capacity and settlement of foundation to ensure stability and safety, analyzing slope stability to prevent landslide, and designing earth retaining structures such as retaining walls by considering lateral earth pressure and stability. We also learned about techniques for ground improvement like compaction, grouting, and soil stabilization to enhance soil properties for construction purposes.

In addition, we would like to thank Prof. Ir. Dr. Chan Chee Ming as our lecturer that helped us to focus on our scope and guided us on the right path for our project. We faced many obstacles in determining the best solution and finding the root cause for our project, but Prof. Chan Chee Ming is not stingy and incalculable to give as many ideas, which helped opened our eyes to solve the main problem. Despite the difficulty in finding the perfect time for discussions, we are glad that we made such a good team. This is because everyone gave their best cooperation toward every task and project. Last but not least we hope and believe that our team will win for the best presentation and overall project. We also want to give the best and create memorable moments for this subject.



SECTION 1
GROUP 6 - JAGUAR
Individual Essays

Soil Battle: Protect the Environment

MUHAMMAD FAQHRUL HAIQAL ABDUL HAFIZ

Soil is like a big storybook underground, full of secrets waiting to be discovered. As I start learning about soil, I'm excited to find out all about it. Here's what I'm hoping to learn, why it's important to me, and how I'll deal with any tricky parts.

First off, I want to learn about what soil is made of and how it works. It's not just dirt there are tiny creatures living in it, and lots of things happening that we can't see. Learning about all these hidden wonder inside the world that I never know or never seen before therefore I can produce more knowledge about soil that I will be used it in future that I will never know.

This course is super important to me because soil is crucial for plants to grow, and plants give us food to eat. It is really important to us to protect our environment for our environment now and for our future generations. Nowadays, our environment is really not in a good condition because of the rapid environment in many countries is increased. So that us should learn about this subject for our better knowledge for our better future. If we understand how soil works, we can make sure it stays healthy so that we always have enough food to go around. Plus, healthy soil can help keep our planet clean and safe for animals and people alike.

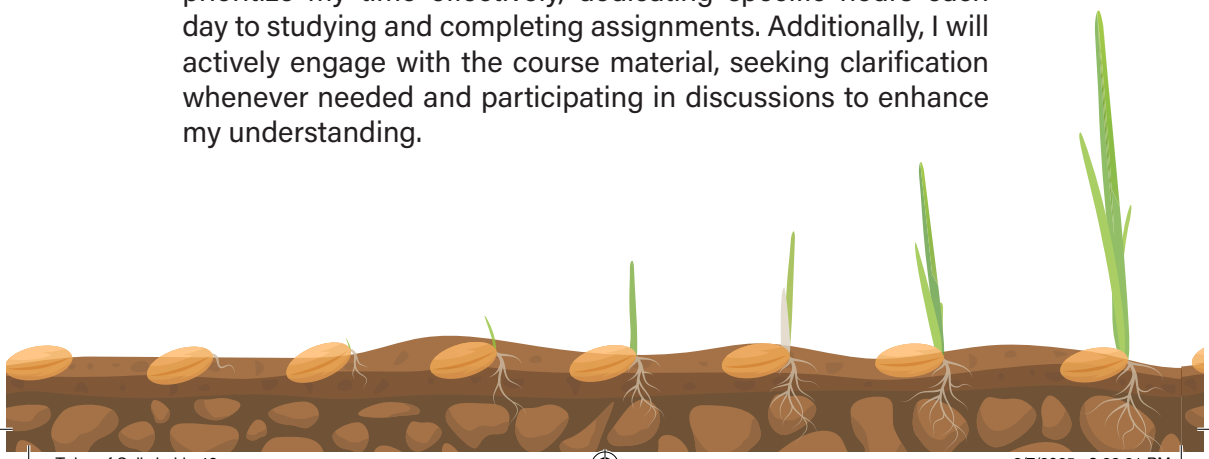
Embracing the Soil Journey

ENGKU BAKTHIAR HISHAMUDDIN CHE ENGKU SUPIAN

Embarking on the SOIL course fills me with anticipation as I anticipate a journey of learning and growth. First and foremost, I expect to learn a wide range of topics, including geo environmental concern and technology. By delving into these areas, I hope to deepen my understanding and broaden my perspective. This knowledge is crucial not only for my personal enrichment but also for my professional development. It will provide me with the expertise and competence needed to excel in my field and pursue my career goals effectively.

Moreover, the SOIL course holds immense importance to me as it offers practical insights and applicable skills. In today's fast-paced world, staying relevant and adaptable is essential. Therefore, the knowledge gained from this course will not only enhance my employability but also empower me to navigate complex challenges with confidence and proficiency. However, I recognize that the learning journey may present challenges along the way. Time management, grasping intricate concepts, and balancing other commitments are potential obstacles I may encounter. Nevertheless, I am prepared to overcome these challenges through perseverance and determination.

To ensure success, I have devised several strategies. First, I will prioritize my time effectively, dedicating specific hours each day to studying and completing assignments. Additionally, I will actively engage with the course material, seeking clarification whenever needed and participating in discussions to enhance my understanding.



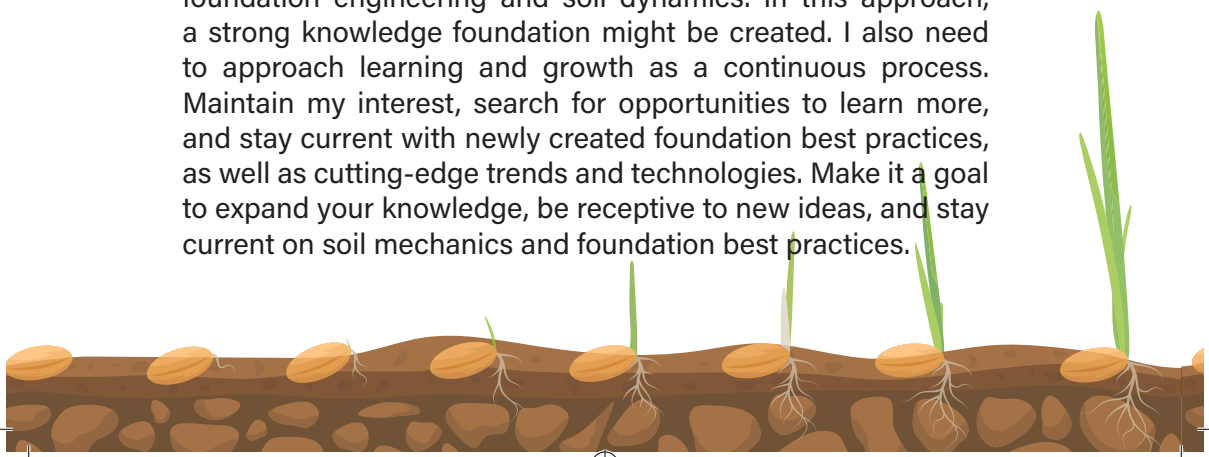
Digging Deep: My Soil Story

NUR FAIZATEY AZHAR

I would study soil characteristics, categorization, and behavior under different circumstances in soil mechanics and foundation. In addition, to guarantee stable and secure building projects, research foundation kinds, design concepts, and techniques for assessing and forecasting soil structure interaction. Understanding soil mechanics and foundations will help me build foundations that cause the least amount of disturbance to the soil and limit any negative effects on the environment by taking groundwater flow and pollution hazards into account.

Next, fluctuating soil conditions might provide difficulties for me as I investigate this subject. This is because soil qualities can differ greatly within a site, making it difficult to precisely characterize soil behaviors and construct foundations. Furthermore, a cause might be the scarcity of site data. This is because it might be difficult to get thorough and trustworthy site data for soil analysis, especially in isolated or difficult-to-reach places. Inaccurate or lacking data might raise project risks and result in less-than-ideal foundation designs.

If I'm going to get over these challenges, I have to focus on understanding the fundamental concepts and theories of foundation engineering and soil dynamics. In this approach, a strong knowledge foundation might be created. I also need to approach learning and growth as a continuous process. Maintain my interest, search for opportunities to learn more, and stay current with newly created foundation best practices, as well as cutting-edge trends and technologies. Make it a goal to expand your knowledge, be receptive to new ideas, and stay current on soil mechanics and foundation best practices.



The Importance of Soil

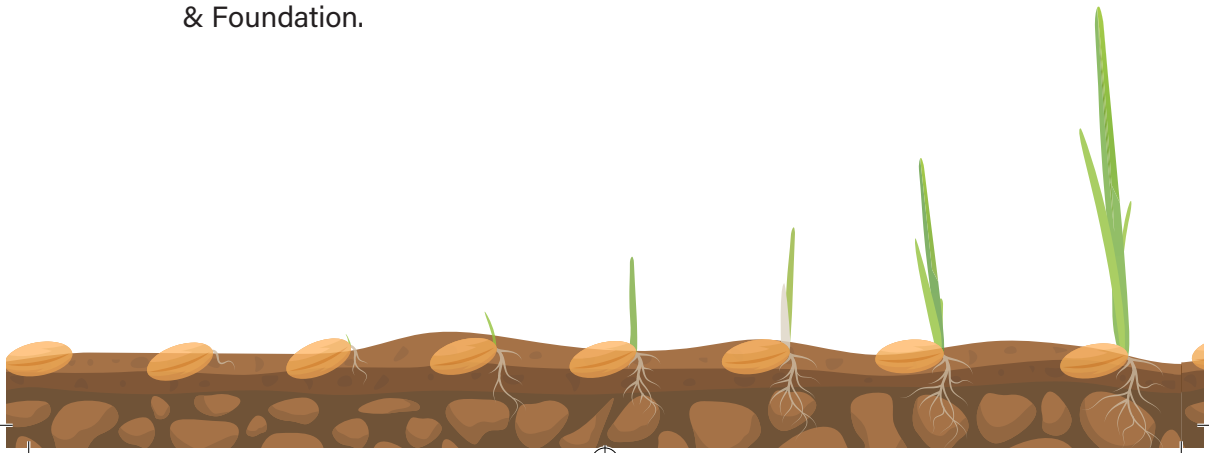
NURUL AMIRA BALQIS SADUN

Soil where the living started it has been nourished to planting and farming in order to fulfil the needs of human also fed the wild living for years. Some people see soil as one of natural resources just like water which is some sort of unlimited source and been used recklessly but the truth is a good condition of soil was almost impossible to access due to man's doing.

Every news shown related to soil has shown me the importance of soil being well taken care of from being abused. In construction point of view these are some examples of incidents that happen from poor soil condition, landslide incident which can lead to building damage and dangerous place to live.

In Soil Mechanics & Foundation I believe I can learn more about the soil structure and properties to ensure the safety of the place and on how to determine a good foundation. There are some challenges I may face during taking this subject such as unfamiliar term or had a hard time to crunch some of the process related to subject but sure will seek help needed from classmates, senior and lecturer to help me through which I am sure will help me clear the fog.

Strategies needed in order to learn the course well by strengthen the core of the subject which is study started from the basic knowledge of the subject, learn the importance, the properties and more before going thru the next chapter of Soil Mechanics & Foundation.



Understanding Soil in Life

MUHAMMAD FIRDAUS NABHAN ABDUL RAHMAN

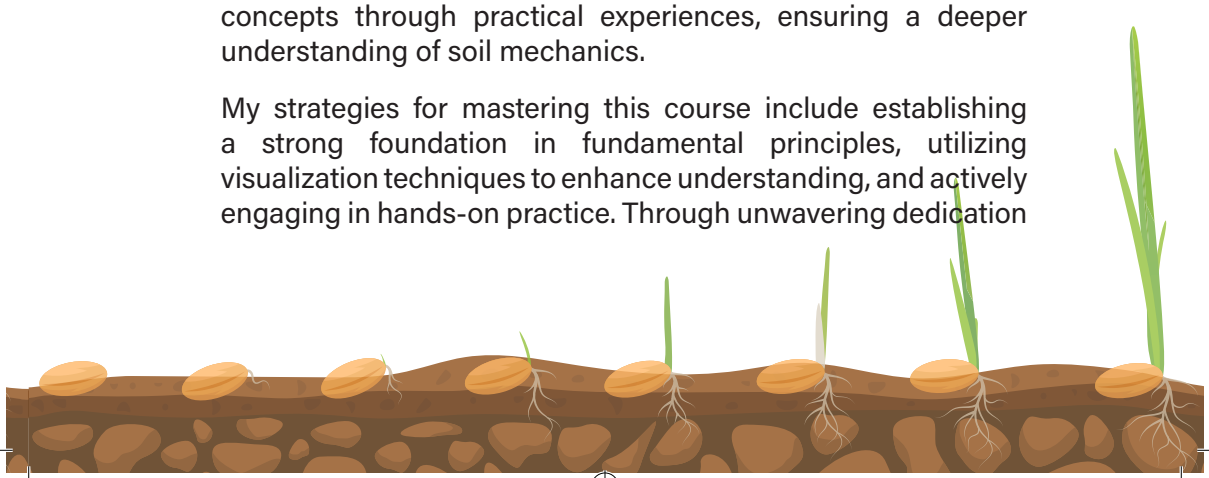
First of all, what I understand about soil is dust and dirt on the surface of the earth that are formed from the accumulation of organic and inorganic materials. It's crucial for life on Earth and vital for assessing land suitability in construction.

Embarking on the study of soil mechanics and foundations is a pivotal step in my journey toward becoming a proficient civil engineer. I eagerly anticipate delving into the intricacies of soil behavior as an engineering material, with the goal of being able to analyze soil properties, evaluate bearing capacity, and design secure foundations for diverse structures.

Recognizing the foundational importance of soil mechanics in civil engineering, I understand that a thorough grasp of soil properties is essential for ensuring the stability and safety of buildings. This knowledge will equip me to make well-informed decisions regarding foundation types, considering factors such as soil strength, settlement, and seismic risks.

While I anticipate challenges in comprehending the diverse dynamics of soil, including its composition, moisture content, and organic matter, I am prepared to tackle them head-on. Engaging in class lectures, seeking clarification from tutors, and collaborating with peers will be instrumental in overcoming these obstacles. Moreover, I am committed to applying learned concepts through practical experiences, ensuring a deeper understanding of soil mechanics.

My strategies for mastering this course include establishing a strong foundation in fundamental principles, utilizing visualization techniques to enhance understanding, and actively engaging in hands-on practice. Through unwavering dedication



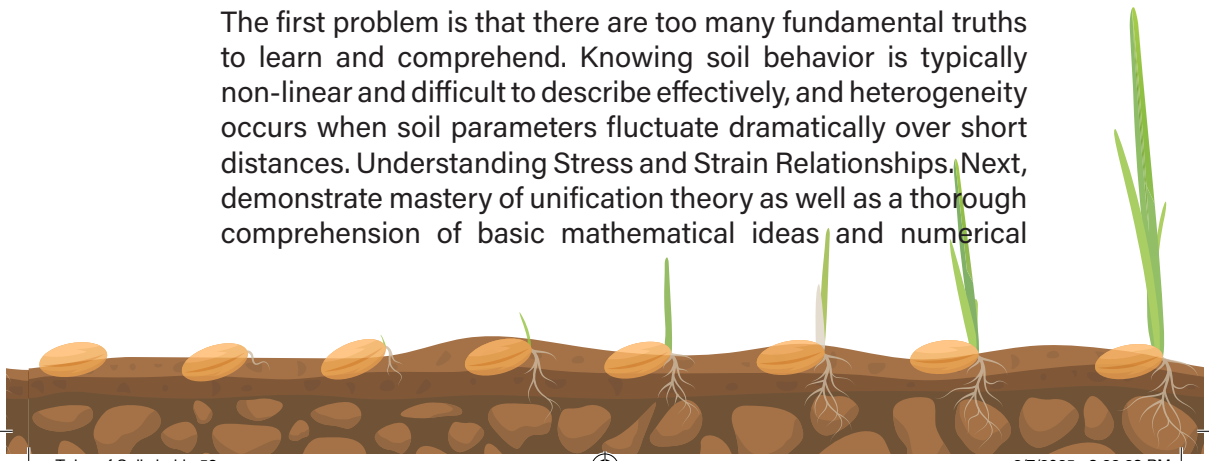
SECTION I
GROUP 6 - JAGUAR
Group Essay

Tales of Soil and Foundations

I gained knowledge of the characteristics, categorization, and behaviors of soil under loads in soil mechanics and foundation engineering. Foundation design, soil testing, and site investigation are important subjects. To provide safe, stable structures, it is essential to comprehend bearing capacity, settlement analysis, and slope stability.

In practical applications, geotechnical problems are addressed, creative solutions are put into practice, and foundations and earth-retaining structures are designed. In addition to greatly enhancing my competence as a civil engineer, this information is crucial for creating robust infrastructure. Learning soil mechanics is important for civil engineers since it allows them to understand soil behavior under various situations. This information is critical for constructing safe foundations, avoiding landslides, and controlling soil-related concerns in construction. Soil mechanics assure the safety, longevity, and sustainability of structures, making it an essential component of civil engineering education and practice.

The first problem is that there are too many fundamental truths to learn and comprehend. Knowing soil behavior is typically non-linear and difficult to describe effectively, and heterogeneity occurs when soil parameters fluctuate dramatically over short distances. Understanding Stress and Strain Relationships. Next, demonstrate mastery of unification theory as well as a thorough comprehension of basic mathematical ideas and numerical



My Soils

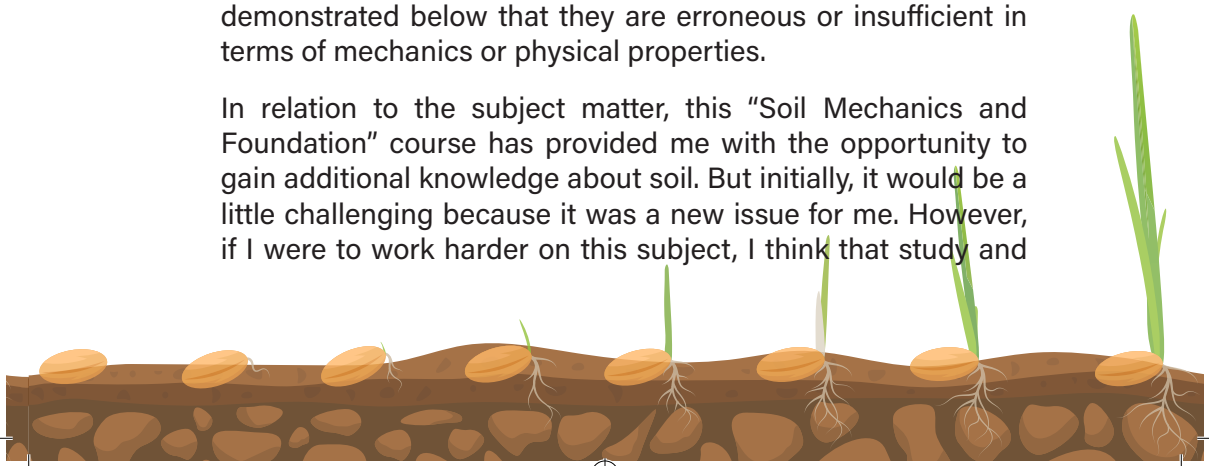
SITI NUR SYAFIQAH AHMAD SAFAWEE

This course, which is required of all students majoring in civil engineering, will introduce geotechnical engineering and a basic understanding of basic soil properties, including composition, classification, and compaction.

Soil is one of the things we usually forget about under our feet. The relationship between earth and us has been increasingly apparent to me as I've gotten older. In addition to serving as a natural filter to remove impurities from water, soil is a significant source of nutrients. Besides, soil is important for us to provide food for us, soil also cleans our water, guards against flooding, and fights drought.

The practical issues that have been mentioned above stem from the need to comprehend and define the common denominators of matric suction, pore water pressure, effective stress, and independent stress factors. These common denominators are the fundamental building blocks and bases of the majority of frameworks developed to date for geotechnical and geoenvironmental engineering issues; however, it is demonstrated below that they are erroneous or insufficient in terms of mechanics or physical properties.

In relation to the subject matter, this "Soil Mechanics and Foundation" course has provided me with the opportunity to gain additional knowledge about soil. But initially, it would be a little challenging because it was a new issue for me. However, if I were to work harder on this subject, I think that study and



Are We Thankful for the Soils?

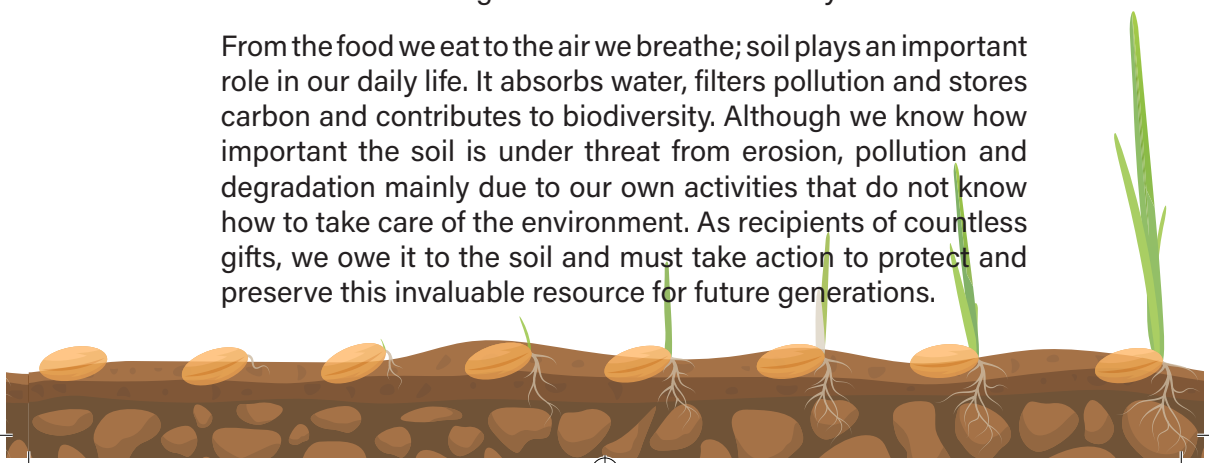
SITI KHAIRUNNISA HASHIM

Soil, which is often neglected and has been taken as something that is very dirty is something that is very important in sustaining life on earth. Usually, children are forbidden to play on the ground because it is considered dirty and has many germs that can make them sick. Doesn't it come to mind that the ground also provides the nutrients needed for plants and it has supported the ecosystem and agricultural productivity?

Soil is more than just the ground beneath our feet; it is a teacher that offers profound lessons on foundation, care, adaptability, interconnectedness, sustainability, patience, and diversity. By applying these lessons to our own lives, we can cultivate a more balanced, resilient, and enriched existence. Understanding and appreciating the wisdom of soil can inspire us to grow in harmony with the world around us.

By studying civil engineering it provides a comprehensive understanding of soil, crucial for constructing stable and safe structures. This field delves into soil mechanics, geotechnical engineering, and soil-structure interaction, teaching the properties, behaviors, and practical applications of soil. Through rigorous site investigations and soil testing, civil engineers learn to assess and manage soil conditions effectively.

From the food we eat to the air we breathe; soil plays an important role in our daily life. It absorbs water, filters pollution and stores carbon and contributes to biodiversity. Although we know how important the soil is under threat from erosion, pollution and degradation mainly due to our own activities that do not know how to take care of the environment. As recipients of countless gifts, we owe it to the soil and must take action to protect and preserve this invaluable resource for future generations.



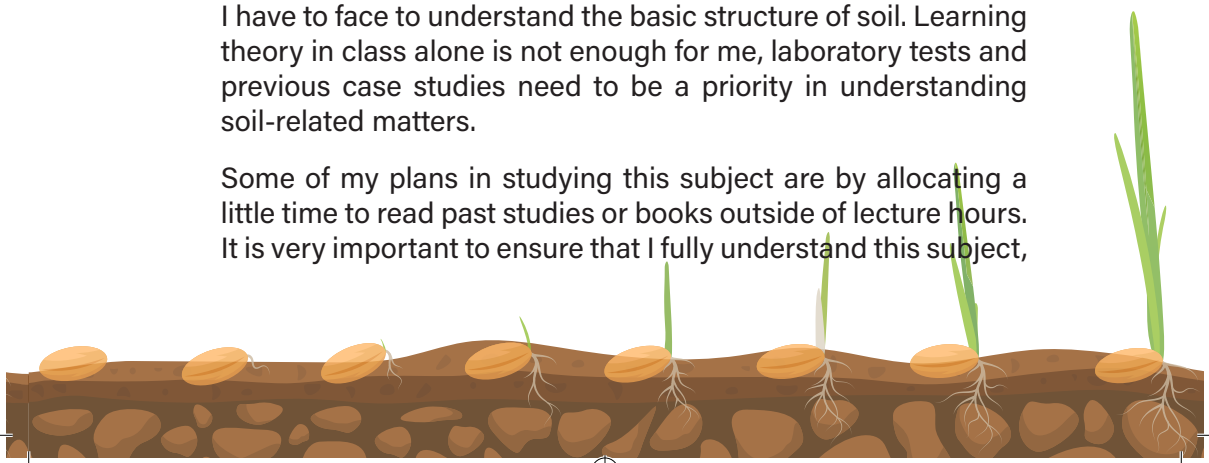
Exploring the Vitality and Challenges of Soil Mechanics in Civil Engineering

MUHAMMAD HAFIZ MOHD TAJRI

Soil, an ordinary human with the sense of touch will feel the soil whether walking or touching it with hands. When seen with the eyes, soil is an important matter in every construction, planting, and so on. I once wondered, will the soil on earth run out? I also wondered why there is soil that burns? Without thinking much, I started to create my own conspiracy and re-examined the understanding of the past people.

As I grew up and continued my studies at a higher level. The field of civil engineering is closely related to soil. Among the subjects exposed are 'SOIL MECHANICS & FOUNDATIONS'. But what do I want to know? Among the things I want to learn are soil surfaces, the advantages and disadvantages of soil, and so on. Soil is an important thing to know. Not all soil is good to use. For example, soil that lacks minerals is not suitable for construction areas. Not only that, with rapid economic development today, soil is a fundamental matter in construction. Many studies need to be done to ensure safe construction use. Several challenges I have to face to understand the basic structure of soil. Learning theory in class alone is not enough for me, laboratory tests and previous case studies need to be a priority in understanding soil-related matters.

Some of my plans in studying this subject are by allocating a little time to read past studies or books outside of lecture hours. It is very important to ensure that I fully understand this subject,



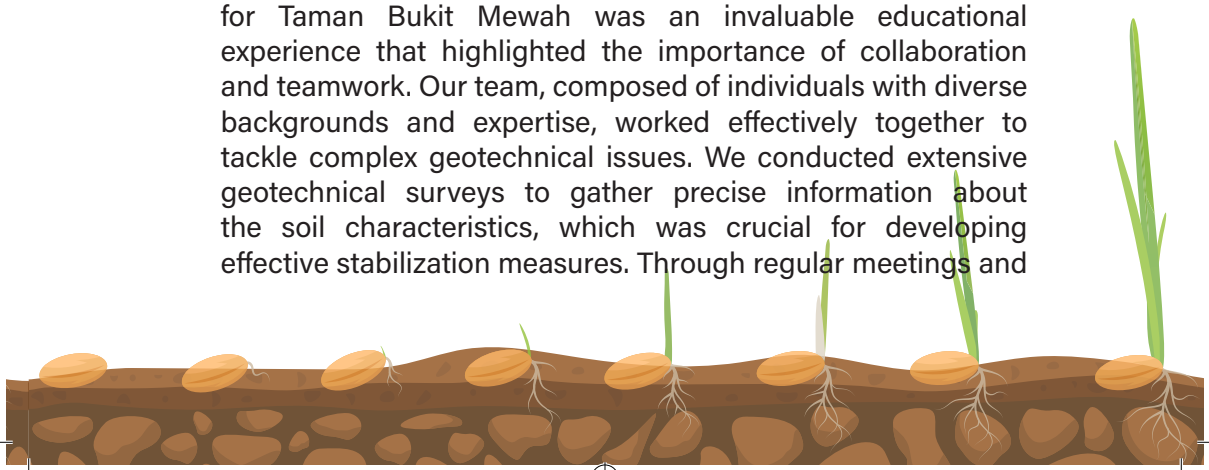
SECTION 1
GROUP 7 - RHAEGAL'S
Group Essay

Insights and Challenges in Soil Mechanics: A Semester Project

RHAEGAL'S

A semester of learning has undoubtedly added a wealth of knowledge to us. The study of soil is closely related to the real world and is applied in daily life. We have learned a lot from the subject of soil mechanics and foundations. This includes solutions to soil problems, types of soil, causes of landslides, and more. As students, we have been able to identify some of the theoretical knowledge taught by our lecturers and apply it to everyday life. For example, we can identify methods for resolving landslides using gabions, which are also seen in several areas along highways.

Additionally, this subject emphasizes the execution of projects in groups. In this project, we were asked to choose a soil problem and find creative and unconventional solutions. Working on the soil mechanics and slope stabilization project for Taman Bukit Mewah was an invaluable educational experience that highlighted the importance of collaboration and teamwork. Our team, composed of individuals with diverse backgrounds and expertise, worked effectively together to tackle complex geotechnical issues. We conducted extensive geotechnical surveys to gather precise information about the soil characteristics, which was crucial for developing effective stabilization measures. Through regular meetings and



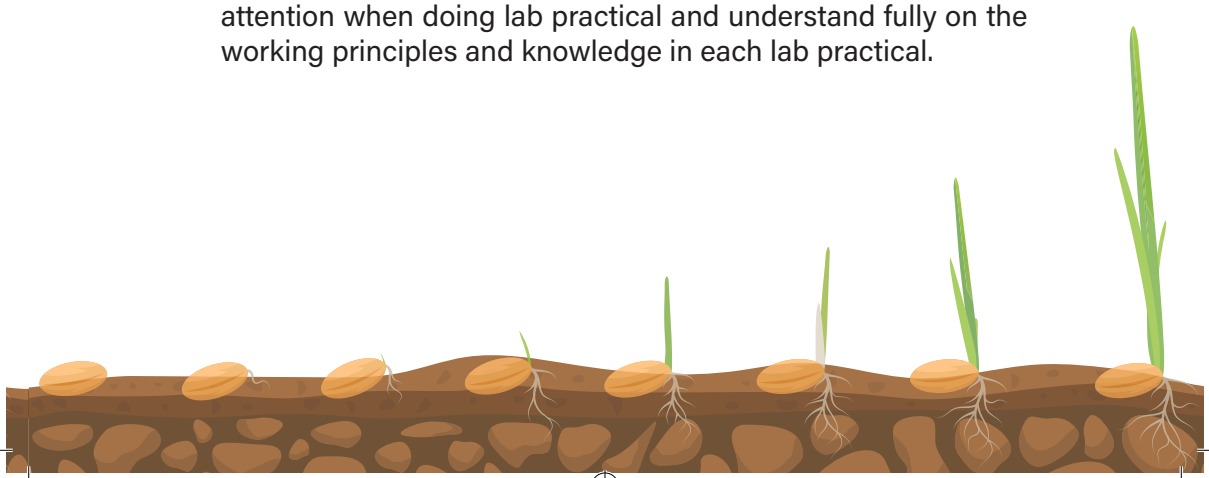
SECTION 2
GROUP 1-DAHLIA
Individual Essays

Discovering the Hidden World Beneath Our Feet

JACOB TAN PENG YONG

In my opinion, soil is the importance and non-negligible as the water or oxygen in our world. The growing of plants, purifying the water, built our houses, combating the flood and drought are the example of the importance of soil to human and environment. Through the course of soil mechanics and foundation, I would learn the properties of soil, type of soil and the relationship between the civil engineering and the soil mechanics and so on. As the building was built on the ground, the course will be important and necessary to be learned in order to achieve the civil engineering technologists.

I think that the challenges that I will be faced through this course are non-familiar to the geographical knowledge and the projects and lab practical in this course. In order to overcome the difficulties, I will do some revision or online research after the courses and do some past year questions of this course to fulfil my knowledge related to the course. Other than that, paying full attention when doing lab practical and understand fully on the working principles and knowledge in each lab practical.

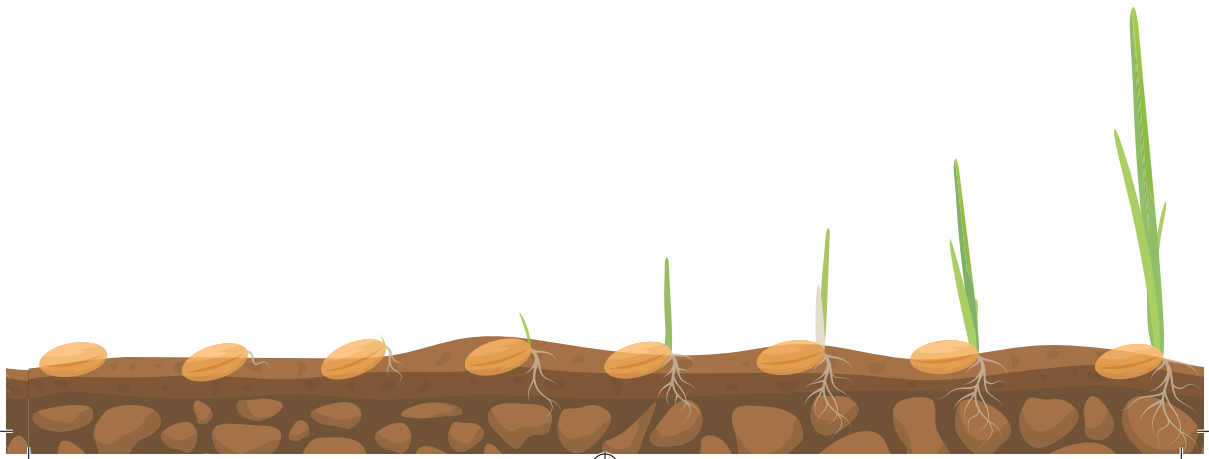


Mastering the Ground Beneath Our Feet

TEE WAN LIN

I would expect to learn all information about soil. For example, the types of soil, the strength of each type of soil, and the most important is the uses of different soils in the construction site. To build a stable and safe building what kind of soil should be used to it. It is very important to know the knowledge about soil because it is one of the main parts to make sure that the building is safe. Other than that, it also increases my knowledge about soil and have a clear understanding of it.

After I look through the introduction of this course, I would say it must be many new things or new information I didn't learn it or see it before, like the tests and any law. Suffering and struggling are unavoidable for me, but I know this is not an excuse. I will try my best to concur it. I will always focus on class to prevent from missing out any key notes. I will also do revision to revise back what have been learned in class. I will continue to use the strategies I use in the previous semester that help me to get A, which is I will learn more when doing exercise.



SECTION 2
GROUP 2 - JASMINE
Individual Essays

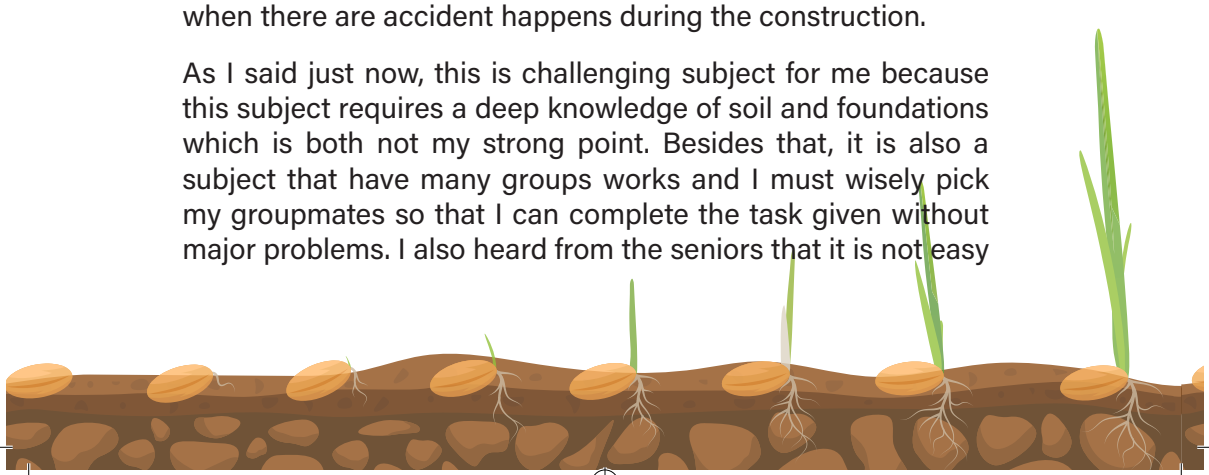
From Playmate to Potential Challenges

ROLLAND CHARIS ANAK LANDING

During my childhood, soil is the best playmate for me. Almost every day from morning to evening I play with soil because it was the most fun thing to do during that time. There were all sorts of fun thing that I paly using soil such as playing castle buildings, making small pool with soil and many more. Talking about soil, there is one saying that I always remember is that "from soil we come, to soil we become" which mean that we were created by God from soil and will coming back become soil after we are dead.

When hearing that I will be learning about soil in this subject, my heart was feeling with thrill and nervous about it because I know it is not an easy subject to score but still, I tell myself to give my best and give it all I must score the best result. From the gist of the introduction for the subject, what I expect to learn from this subject are the types of soil use in construction, how soil affect the construction and what is happening to the soil when there are accident happens during the construction.

As I said just now, this is challenging subject for me because this subject requires a deep knowledge of soil and foundations which is both not my strong point. Besides that, it is also a subject that have many groups works and I must wisely pick my groupmates so that I can complete the task given without major problems. I also heard from the seniors that it is not easy

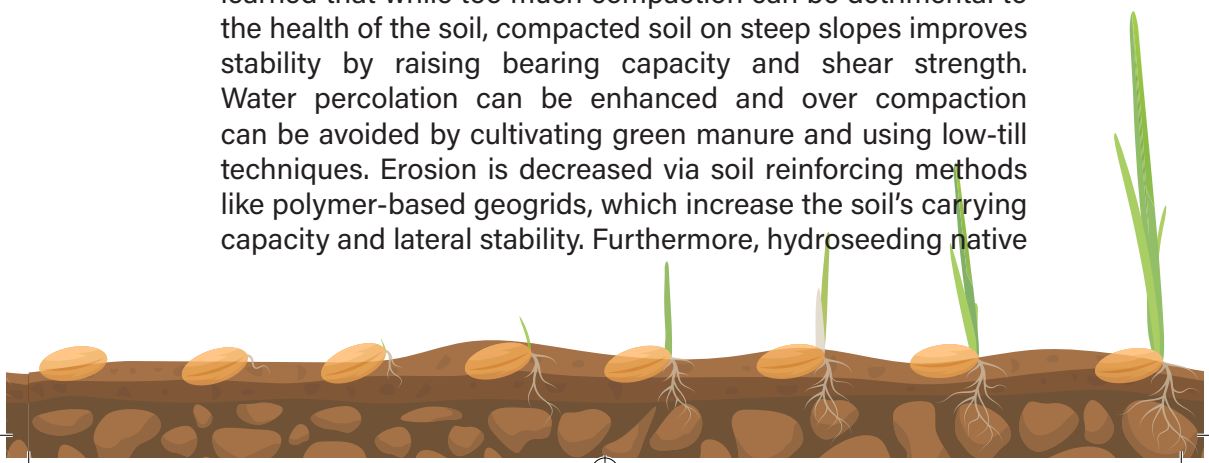


SECTION 2
GROUP 2 - JASMINE
Group Essay

Discovering the Complexity of Soil: A Journey Through Soil Mechanics

Our soil mechanics course experience has been remarkable. We used to think of soil as just the ground that we walk on. This course explored the dynamic and complicated character of soil, including its impact on construction and environmental sustainability. Based on the theory classes that we learnt, the significance of soil qualities like cohesion, permeability, and shear strength is among the most important things that we need to discover. These characteristics are critical in establishing the overall safety of structures, the bearing capacity of foundations, and the contaminations of soil.

Gaining knowledge of the concepts of effective stress and the influence of water content on soil stability has been essential in comprehending the mechanics behind soil behaviour. We learned that while too much compaction can be detrimental to the health of the soil, compacted soil on steep slopes improves stability by raising bearing capacity and shear strength. Water percolation can be enhanced and over compaction can be avoided by cultivating green manure and using low-till techniques. Erosion is decreased via soil reinforcing methods like polymer-based geogrids, which increase the soil's carrying capacity and lateral stability. Furthermore, hydroseeding native



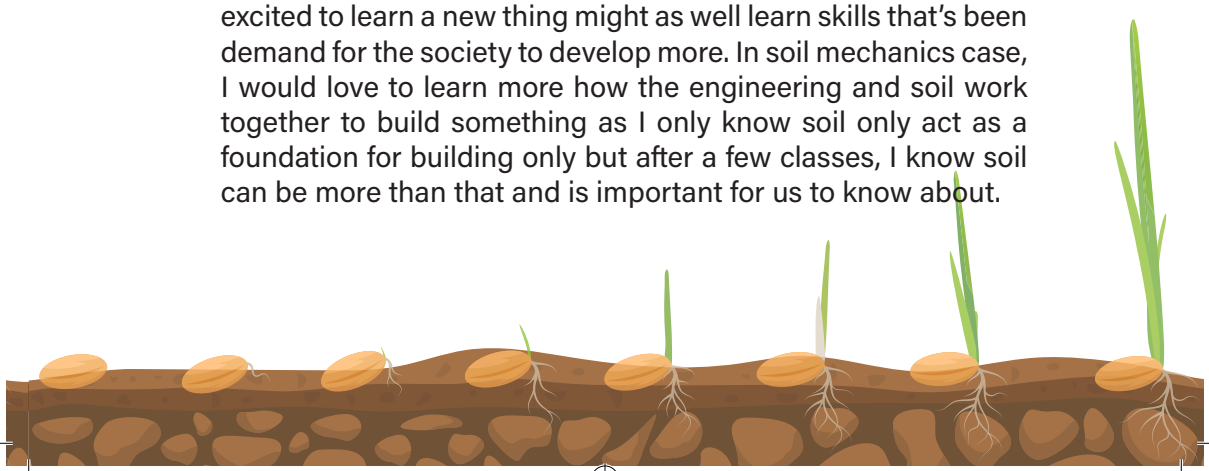
SECTION 2
GROUP 3 -LAVENDER
Individual Essays

From Digital World to Grounded Reality

MUHAMMAD AMIRUL ADLI MOHAMED AMIN

There's one time I imagine what would the world be without soil, which they act as a ground for us in our daily life and without it our life could be a disaster or a new style of life where we can live byfloating around using a gravity mechanism that us human might develop for us to adapt to the environment. Soil, often referred to as Earth's living skin, is a dynamic and complex ecosystem in its own right. From the lush forests to the vast plains, from the fertile farmlands to the rugged mountain sides, soil forms the very foundation upon which life flourishes.

Before I entered civil engineering degree, I majored in computer science and all I learn is about the development for our technology such as coding, application and system. I still believe in technology development is crucial for human civilization but after I learn about civil engineering, I discovered that engineering also act as a pillar for us human to develop more in our civilization. When I discovered this fact, I become excited to learn a new thing might as well learn skills that's been demand for the society to develop more. In soil mechanics case, I would love to learn more how the engineering and soil work together to build something as I only know soil only act as a foundation for building only but after a few classes, I know soil can be more than that and is important for us to know about.

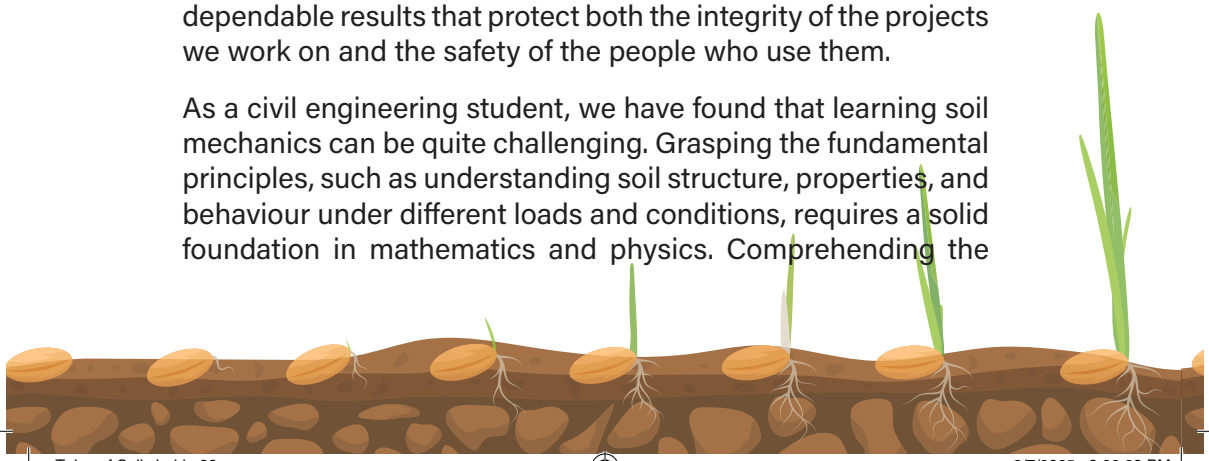


SECTION 2
GROUP 3 -LAVENDER
Group Essay

Our Journey Through Soil Mechanics

In this course, which is Mechanic and Soil Foundation, we learn the principle of soil mechanics, such as how soil is classified, what their physical characteristics are, and how they behave under various loading scenarios, in a course on mechanics and soil foundations. Soil permeability, consolidation, shear strength, and compaction are important subjects. We also learn about the design and analysis of foundations, including slope stability, retaining walls, and shallow and deep foundations. In order to safely and effectively build structures that interact with the ground and handle issues like earth pressure, bearing capacity, and settlement, it is imperative to have this understanding. Soil mechanics is a crucial field of study for civil engineers like us, as it provides the theoretical foundation for analysing and designing geotechnical engineering systems and structures. By understanding how soil behaves, we can predict potential issues, ensure stability, and design safe, reliable structures for buildings, bridges, dams, tunnels, and other projects. Soil mechanics equips me with the knowledge and tools we need to anticipate problems, find solutions, and deliver high-quality, dependable results that protect both the integrity of the projects we work on and the safety of the people who use them.

As a civil engineering student, we have found that learning soil mechanics can be quite challenging. Grasping the fundamental principles, such as understanding soil structure, properties, and behaviour under different loads and conditions, requires a solid foundation in mathematics and physics. Comprehending the



SECTION 2
GROUP 4 - BUTTERFLY PEA
Individual Essays

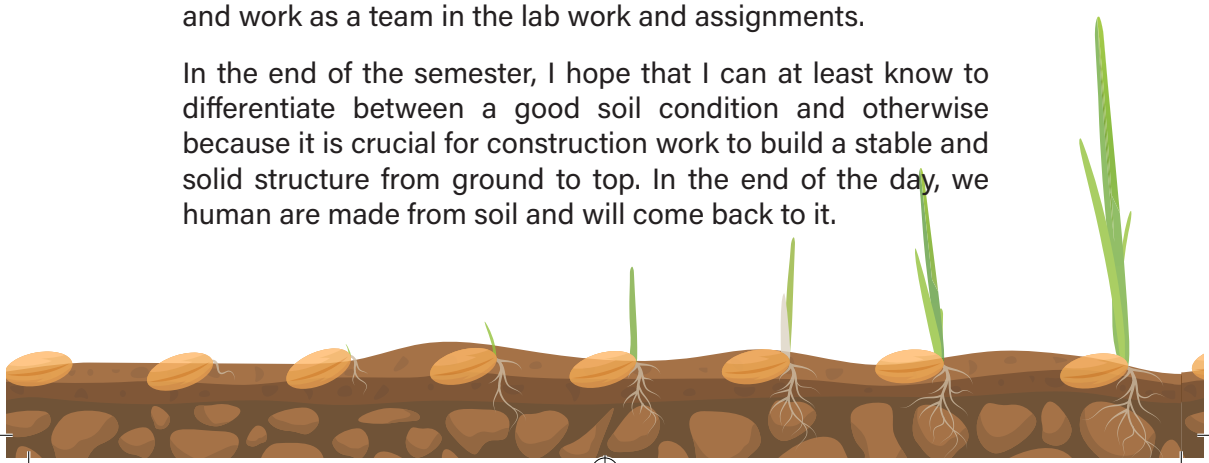
From Ground Up: A New Perspective on Soils

MUHAMMAD ZULKARNAIN ROHAIZAK

Under our feet is something that we as humans often overlook and are grateful for, it is the soil and ground. Before this is my diploma, I never take any subject related to this subject. As a civil engineering student this semester, I was required to take the subject Soil Mechanics and Foundation. All these things a new to me and somehow it is interesting.

I always think that soil is only needed as a medium and foundation to put the building in place and all soil is equal. But soil has criteria and characteristics that are more important than that. Each soil has a different use depending on the needs whether in the field of construction engineering, agriculture, and so on. In this subject, I will be able to increase my knowledge and skills and to some extent be able to recognize the types of soil, composition and its classification to use in my field of studies. I hope that I can overcome every challenge and face it to excel in my studies this semester. I also need to cooperate and work as a team in the lab work and assignments.

In the end of the semester, I hope that I can at least know to differentiate between a good soil condition and otherwise because it is crucial for construction work to build a stable and solid structure from ground to top. In the end of the day, we human are made from soil and will come back to it.



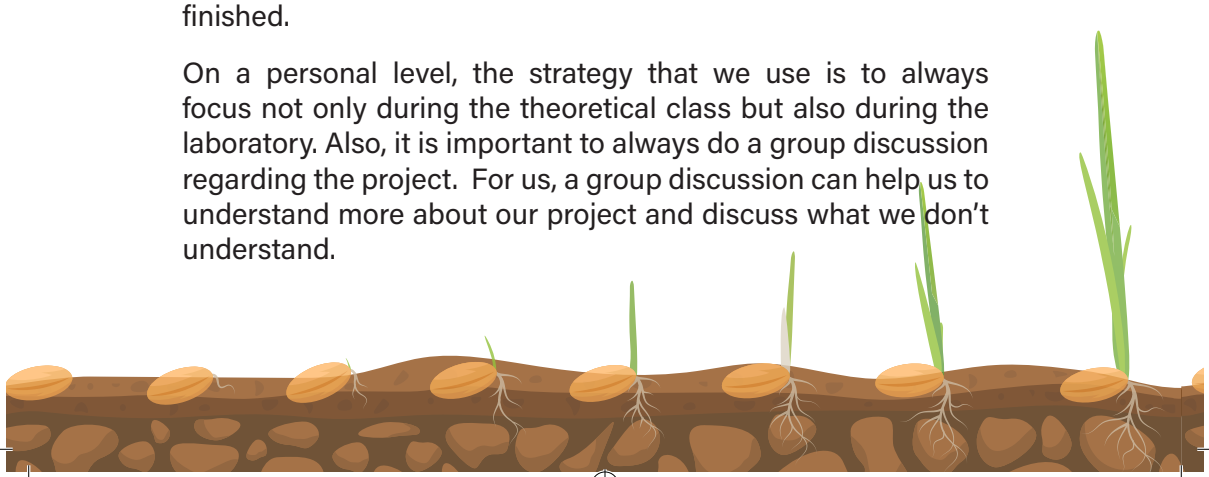
SECTION 2
GROUP 4 - BUTTERFLY PEA
Group Essay

The Butterfly Pea's Soil Journey

This is the second part of our soil story, after we have learned Soil Mechanic and Foundation for 14 weeks, we can say this is a very profound experience. Learning soil mechanic is like learning the backbone of civil engineering. We get to know and understand the soil's behaviour and why it is important for us to choose the right soil before the construction begins. Besides that, learning the process of designing foundations made us realized it is crucial to know that a well-designed foundation can mitigate many potential problems that we might face in the future.

For us the most challenging part is the theoretical understanding. To know all the soil properties, how to choose the right solution if we face soil problems. the effect of certain design towards the environment and many more. So, to ensure that we can remember and understand what has been taught, we tend to more focus on technical learning in the laboratory. We try to make sure that we understand why the experiment needs to be done and what results we will get after the experiment is finished.

On a personal level, the strategy that we use is to always focus not only during the theoretical class but also during the laboratory. Also, it is important to always do a group discussion regarding the project. For us, a group discussion can help us to understand more about our project and discuss what we don't understand.



SECTION 2
GROUP 5 -ORCHID
Individual Essays

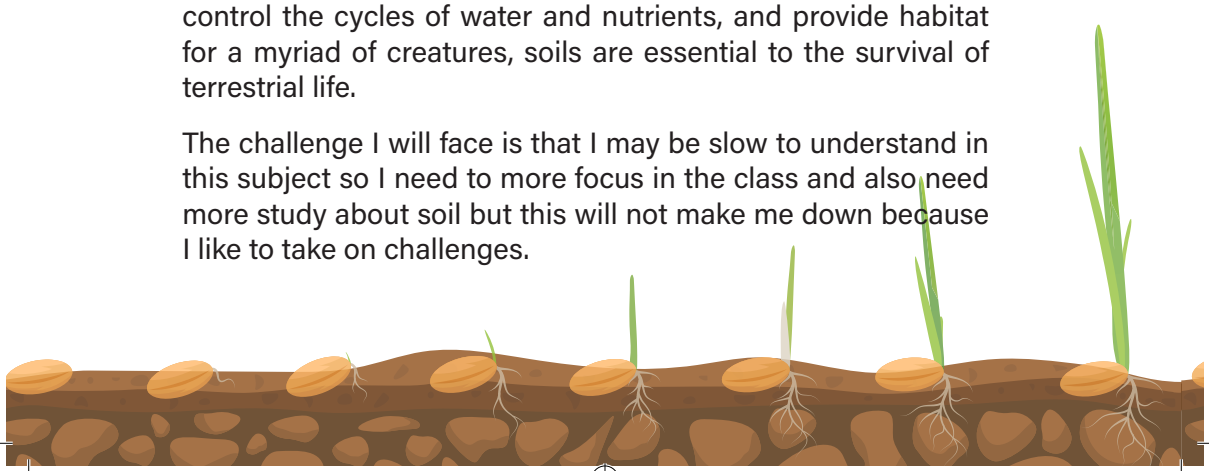
From Novice to Knowledgeable

AMINUDDIN MOHD TAMRIN

I know soils are one of the important things to study and know because in earth, almost everywhere have soils and mostly road is built on soils. Since at school I didn't take science stream so I don't have any basic knowledge about it. Soils also have many types of various like clay soil, sandy soil, peat soil and etc.

In this class I would learn about soil classification, design considerations of geo-structures and how to treatment a soil and all of this is good for me to learn as an engineer because when want to build a building we must identify first if the soil are safe to use or build a building in a long-term use. The fact that I know about soil is the complex and dynamic mixture of minerals, organic matter, air, water, and living things that covers the surface of the Earth is known as soils. They are created by the long-term weathering of rocks, which is impacted by a variety of elements including time, space, parent material, climate, and geography. Because they act as a growing medium for plants, control the cycles of water and nutrients, and provide habitat for a myriad of creatures, soils are essential to the survival of terrestrial life.

The challenge I will face is that I may be slow to understand in this subject so I need to more focus in the class and also need more study about soil but this will not make me down because I like to take on challenges.



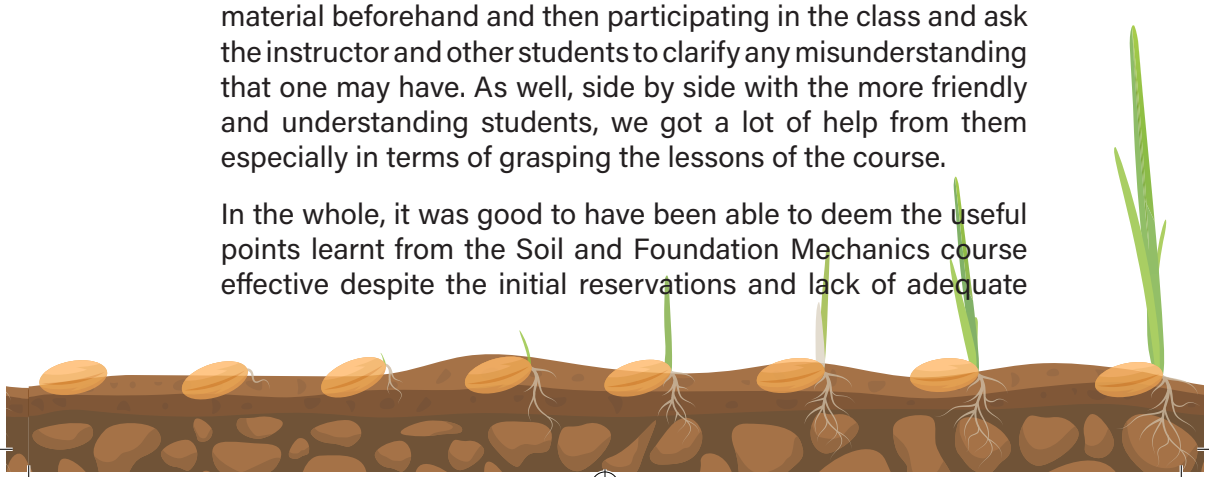
SECTION 2
GROUP 5 -ORCHID
Group Essay

Lessons Learned from Soil and Foundation Mechanics

When starting our semester, some of us had some scepticism as to the difficulty of the subject in question, namely Soil and Foundation Mechanics, due to some negative feedback from previous students who had declared that it was quite a tough course. But the thing that we get from this subject is just that if you take good care on the land, then for sure the land will give you its best.

Hence, it becomes essential to identify the requirements of the soil, as well as the shapes that will better meet the support needed by the ground. The basic issue of constraint of time is evident to be a major issue during the work seemed to be a major issue throughout. The overall informative sessions are too brisk, which has a tendency of denying the learners ample opportunity to properly grasp and implement ideas. In such situations, literature cannot be overestimated to be as vital as suggested above and this has already been mentioned earlier regarding preparation and study. This can include coming to class prepared to discuss the content to be taught course material beforehand and then participating in the class and ask the instructor and other students to clarify any misunderstanding that one may have. As well, side by side with the more friendly and understanding students, we got a lot of help from them especially in terms of grasping the lessons of the course.

In the whole, it was good to have been able to deem the useful points learnt from the Soil and Foundation Mechanics course effective despite the initial reservations and lack of adequate



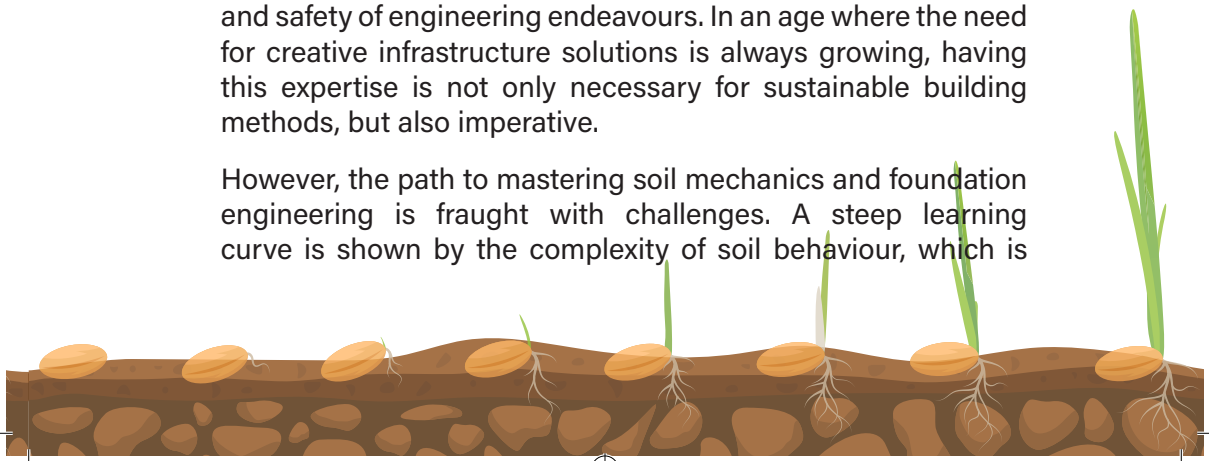
Expectations from Soil Mechanics and Foundation Course

YEO JIA ZHI

As a student of Civil and Environment Engineering starting the Soil Mechanics and Foundation course, my goals are to have a thorough grasp of how soil behaves in different situations and how important it is to foundation engineering. For every aspiring civil engineer, understanding the complex link between soil qualities and how they affect the design and stability of structures is crucial, and this course promises to provide just that.

It is impossible for me to overestimate the importance of this course. I hope to be able to make a meaningful contribution to the design of safer and more effective structures with the information I've received through this course. Comprehending soil mechanics is essential for anticipating possible problems and averting structural collapses, which guarantees the lifetime and safety of engineering endeavours. In an age where the need for creative infrastructure solutions is always growing, having this expertise is not only necessary for sustainable building methods, but also imperative.

However, the path to mastering soil mechanics and foundation engineering is fraught with challenges. A steep learning curve is shown by the complexity of soil behaviour, which is



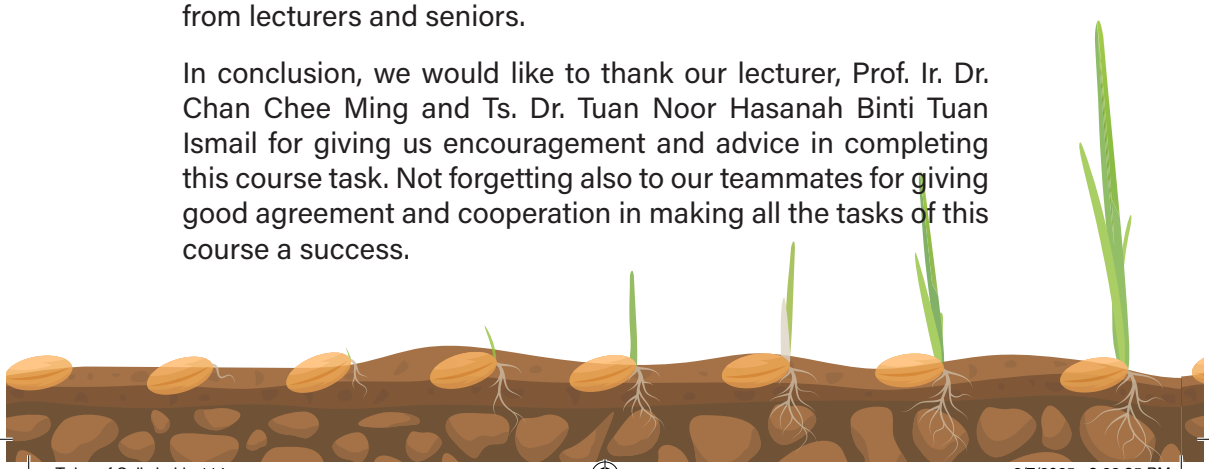
SECTION 2
GROUP 6 -ROSEMARY
Group Essay

Our SOIL Story

This semester, we are compulsory to take the Soil Mechanics and Foundation course. Here is our reflection on this course, what we learned from this course is about soil properties and their classifications, soils' responses to loading, problematic soils, and pre-treatment. Studying this course is important because it is essential for anyone involved in construction and civil engineering. It ensures the safety, stability, and longevity of structures while promoting sustainable and cost-effective building practices.

Understanding these principles is fundamental to addressing the complexities of building on various soil types and under different environmental conditions. Among the challenges we have to face throughout this course is that it is difficult to make decisions when working in teams. Where it takes a long time to make a decision. In addition, we also faced problems in critical thinking and analysis regarding the solution for the case study. However, we were able to manage this well because of the help and consultation from our lecturers. The strategies to make it easy to learn and understand the requirements of CLO for this course are always asking questions and asking for guidance from lecturers and seniors.

In conclusion, we would like to thank our lecturer, Prof. Ir. Dr. Chan Chee Ming and Ts. Dr. Tuan Noor Hasanah Binti Tuan Ismail for giving us encouragement and advice in completing this course task. Not forgetting also to our teammates for giving good agreement and cooperation in making all the tasks of this course a success.



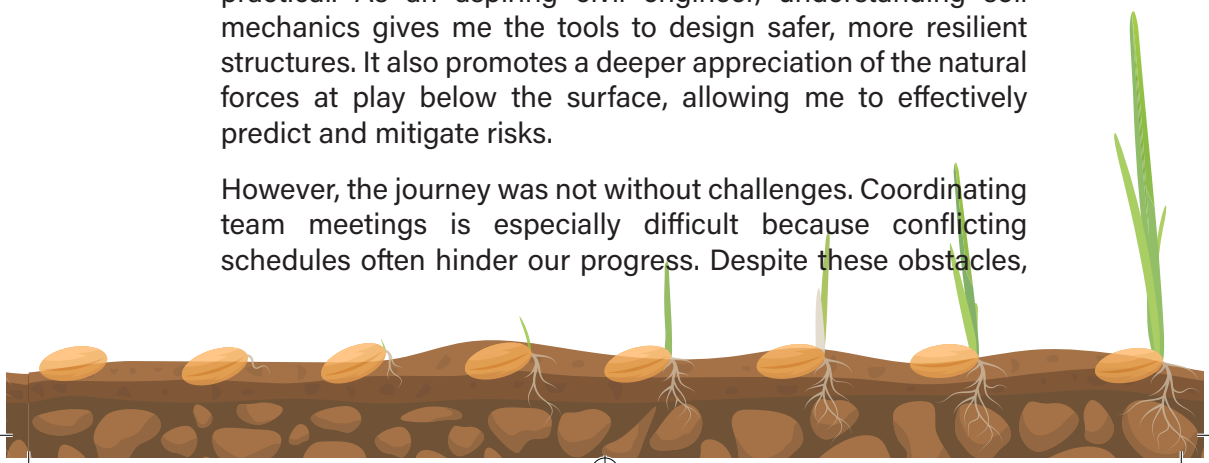
Reflection on Soil Mechanics

MOHADIR BUDIMAN

My journey through the Soil Mechanics course has been an enriching experience, shaping my understanding of the fundamental factors that govern civil works. The complexity of soil behaviour, from hydrostatic pressure to landslides, has shown the profound impact of soil mechanics on the stability and safety of structures. One of the most important aspects I learned was the importance of understanding hydrostatic pressure. This concept is important in the design of foundations, retaining walls and other structures that interact with groundwater. Recognition of the influence of water pressure on soil stability has highlighted the need for meticulous planning and analysis in engineering projects.

Additionally, research on landslides has highlighted the dangers posed by unstable slopes and the need to take preventative measures. Knowing how to analyse soil samples and interpret data to predict possible landslide scenarios has proven invaluable. The knowledge gained in this course is extremely practical. As an aspiring civil engineer, understanding soil mechanics gives me the tools to design safer, more resilient structures. It also promotes a deeper appreciation of the natural forces at play below the surface, allowing me to effectively predict and mitigate risks.

However, the journey was not without challenges. Coordinating team meetings is especially difficult because conflicting schedules often hinder our progress. Despite these obstacles,



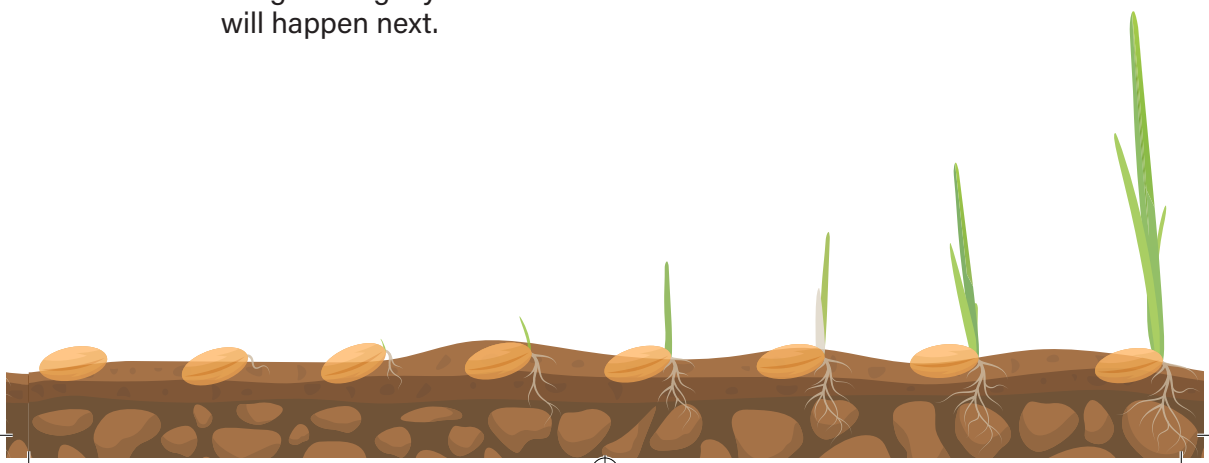
SECTION 2
GROUP 7 - LILY
Group Essay

Soil Time

During semester 4 of this course, we Group 7 (Lily) have learned about how the geotechnical processes work by doing discussions with the lecturer (Dr. Tuan Hasanah) that consult our progress report and through teaching sessions by Prof. Chan. From the progress report, the most challenging part is getting our group to discuss it with the lecturer together. This is because during this semester there are a lot of holidays, which make it difficult for us to meet each other due to Hari Raya, which probably means most of the students are going back to their hometown.

We don't plan to interrupt our lecturer, who is enjoying their Hari Raya time. After the campus reopened, most of the teammates were rushing for other course assignments. To overcome this situation, we had a small discussion about our own timetable for us to discuss, which is the best time to discuss together, and we also created a group discussion that we could discuss with Dr. Tuan Hassanah about her time so we could consult face-to-face.

From here, I learned that you shouldn't do work at the last minute, make plans at the last minute, and don't ever take things too lightly because we ourselves don't even know what will happen next.



SECTION 2
GROUP 8 -ROSE
Individual Essays

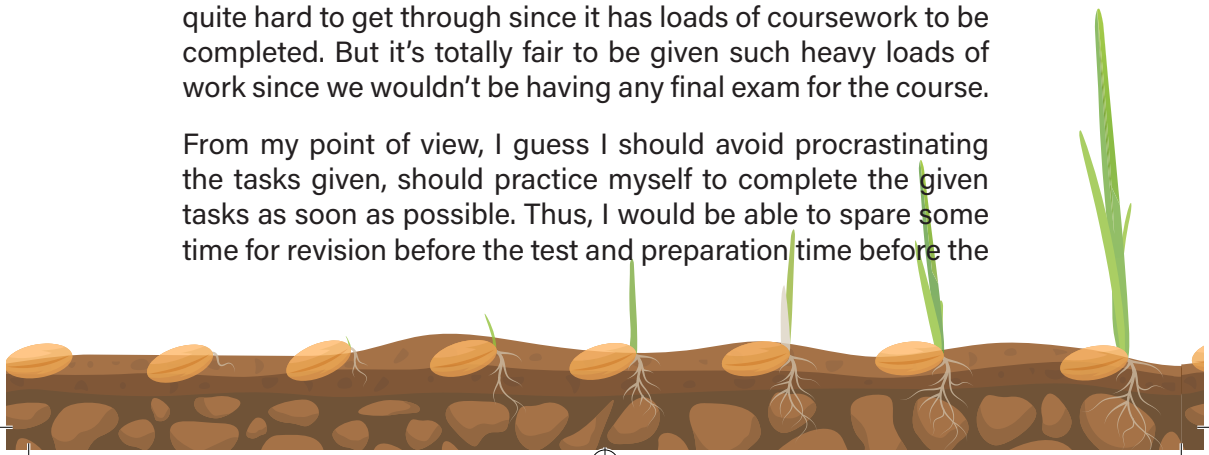
Discovering the Hidden Importance of Soil in Engineering and Construction

SHIVANESSWARY A/P SATHASIVAM

Since small I only thought that soil is just involve in agriculture field. Never knew that soil plays a big role in building a structure until I started studying engineering. Generally, I understand that the property of soil is crucial for the stability of the building. Because the stability and load bearing capacity must be used to determine the type of foundation requires for the building.

Since I just attended my first week lecture, I also learned the engineering properties and behaviour of the soils. According to the lecture, it has stated that there are 3 categories of soil depends on the modes of formation, which goes by the name of transported soil, residual soil, and organic soil. Based on the feedback given by the seniors who had taken this course in previous semesters, majority has stated that this course is quite hard to get through since it has loads of coursework to be completed. But it's totally fair to be given such heavy loads of work since we wouldn't be having any final exam for the course.

From my point of view, I guess I should avoid procrastinating the tasks given, should practice myself to complete the given tasks as soon as possible. Thus, I would be able to spare some time for revision before the test and preparation time before the



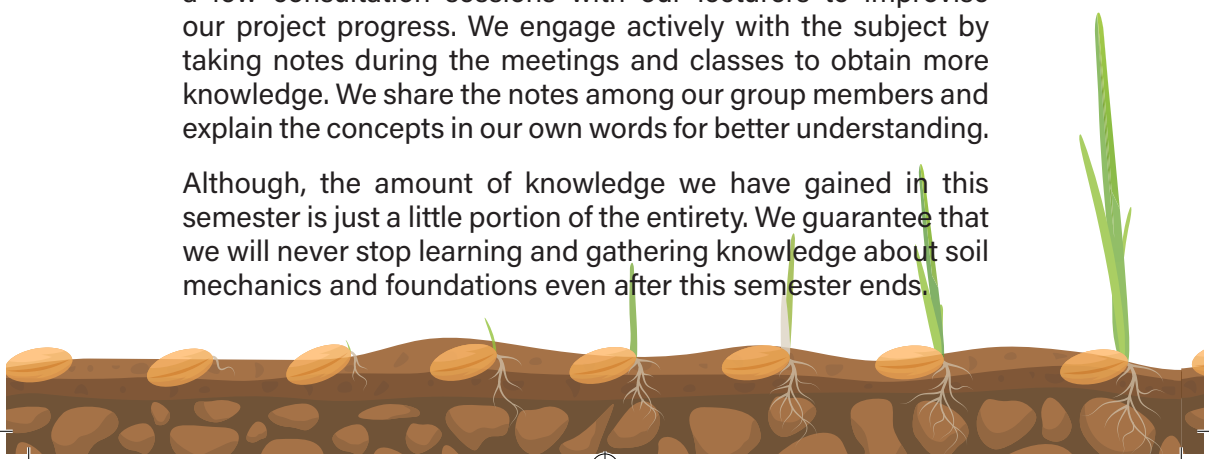
SECTION 2
GROUP 8 -ROSE
Group Essay

Our Reflections on Soil Mechanics & Foundations

We are astonished when we realized that we are going to finish the semester in a week, because it feels we just only started this semester. All this while, we thought that soil is just one of the natural elements found on earth, but our perception was wrong. Soil mechanics is crucial in the civil engineering field. We believe that the strength of a structure practically depends on the soil properties.

As a civil engineer student, we strongly believe that excelling in this course is solely crucial for us during working phase in future. The fact that some of us are not from the civil engineering background, it really led us to some difficulties studying this course from the scratch. There were certain concepts and terminology that were new for us to learn, but we are glad that we were able to adapt although it took some time for us. We understand that soil mechanics and foundations is one of the subjects that can be inherently difficult due to their abstract nature, yet we go by nothing is impossible if you believe in yourself. Therefore, we spent extra time on this subject to enhance ourselves with the knowledge of soil. We also had a few consultation sessions with our lecturers to improvise our project progress. We engage actively with the subject by taking notes during the meetings and classes to obtain more knowledge. We share the notes among our group members and explain the concepts in our own words for better understanding.

Although, the amount of knowledge we have gained in this semester is just a little portion of the entirety. We guarantee that we will never stop learning and gathering knowledge about soil mechanics and foundations even after this semester ends.



SECTION 3
GROUP 1 - DREADNOUGHTUS
Individual Essays

Exploring Soil Mechanics

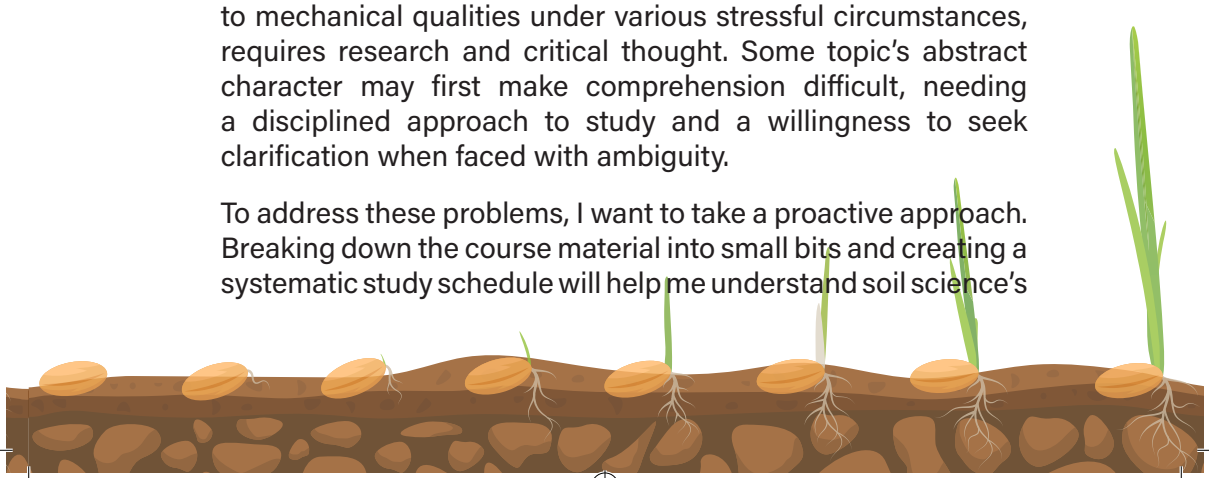
ABDUL ADIB REJAB ABDUL AZIZ

At first, when I registered for this course, I anticipated a transformative experience that would increase my knowledge of the Earth's most fundamental resource. I thought this course would teach me about soil formation, composition, and function, as well as provide me with an understanding of its critical role in supporting the structure of the building.

Understanding soil mechanics is critical for me because it has enormous practical applications in my chosen building sectors. By studying soil fertility, structure, and classification, I aim to get the knowledge needed to optimise crop output, reduce land degradation, and promote sustainable land management techniques. Furthermore, understanding the complex relationships of soil will allow me to contribute to efforts successfully.

One important thing I expect is to understand the variance of soil and the complex theories and principles of soil mechanics. Understanding theoretical ideas, from soil formation processes to mechanical qualities under various stressful circumstances, requires research and critical thought. Some topic's abstract character may first make comprehension difficult, needing a disciplined approach to study and a willingness to seek clarification when faced with ambiguity.

To address these problems, I want to take a proactive approach. Breaking down the course material into small bits and creating a systematic study schedule will help me understand soil science's



SECTION 3
GROUP 1 - DREADNOUGHTUS
Group Essay

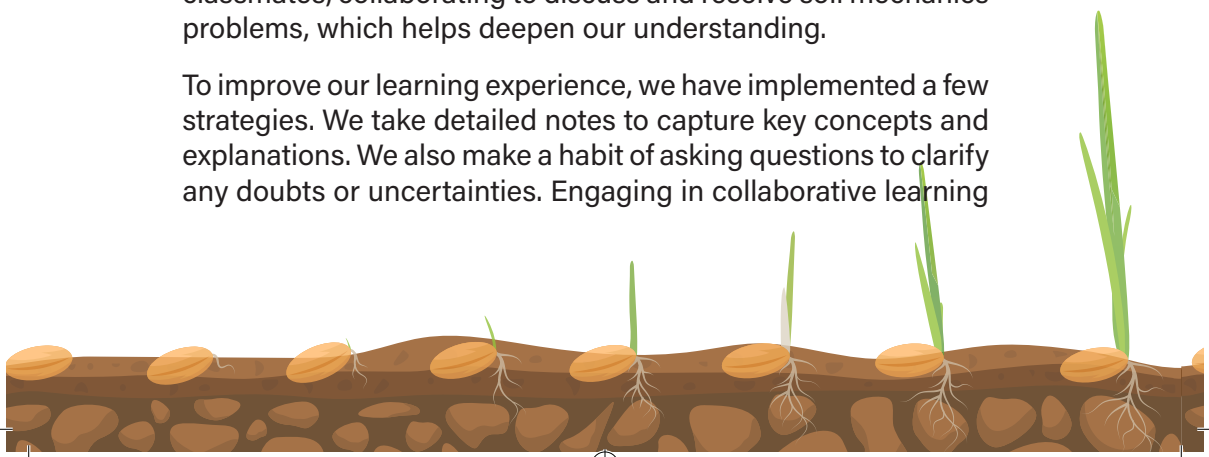
Journey to "The Soil"

DREADNOUGHTUS

In this course, we have explored the fundamental principles and concepts of soils. This includes understanding how different soil types are classified based on particle size distribution and plasticity characteristics, among other factors. Additionally, we have gained knowledge on performing standard soil testing procedures in the laboratory. These skills are crucial for analyzing soil conditions, determining the causes of soil failure, and selecting appropriate soil improvement techniques during the construction process.

However, we have faced several challenges. Firstly, the theoretical aspects of soil mechanics have been difficult to grasp. This difficulty arises because it is challenging to visualize soil conditions based on reference books alone. Additionally, the limited time available for studying this subject has impacted our ability to learn effectively. To address these challenges, we have adopted several strategies. We consult with professors, who provide guidance on solving the problems we encounter in this subject. Moreover, we engage in group studies with classmates, collaborating to discuss and resolve soil mechanics problems, which helps deepen our understanding.

To improve our learning experience, we have implemented a few strategies. We take detailed notes to capture key concepts and explanations. We also make a habit of asking questions to clarify any doubts or uncertainties. Engaging in collaborative learning



SECTION 3
GROUP 4 -RAPTOR
Group Essay

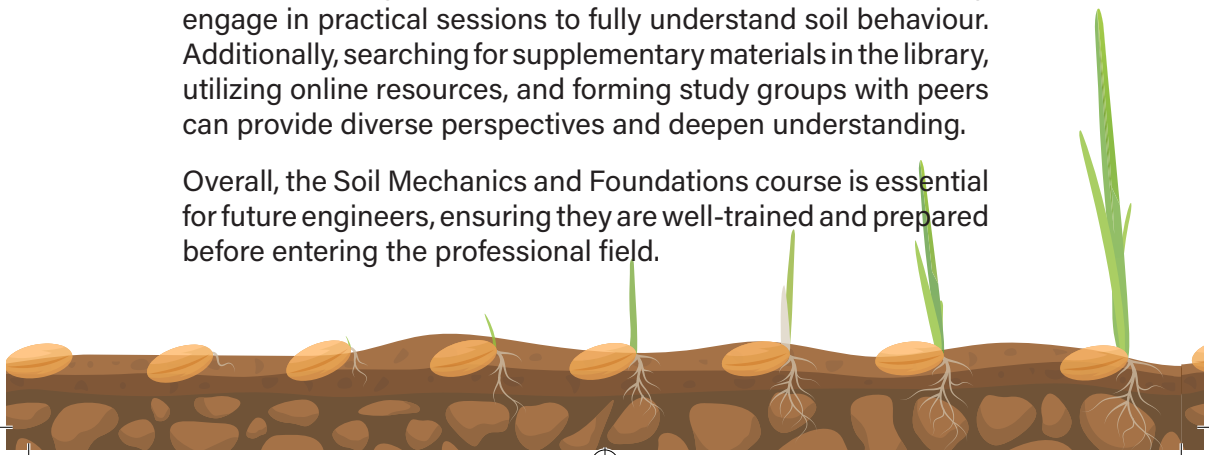
The Vital Role of Soil Mechanics and Foundations

Based on the results of learning Soil Mechanics and Foundations this semester, I was able to grasp several important concepts regarding soil quality and its properties, such as soil classification, permeability, and shear strength. This subject has also enhanced my real-life problem-solving skills because the assignments, practical labs, and final project are designed to apply theoretical and practical knowledge to real-world scenarios.

Designing safe and efficient foundations requires an understanding of how to assess and anticipate soil behaviour under varying loading conditions, which was covered extensively in this course. By gaining a thorough understanding of soil-structure interactions, I can predict soil capabilities and ensure that constructed structures will be stable and safe for the public.

However, learning Soil Mechanics and Foundations presents several challenges. One significant challenge is interpreting soil behaviour and its implications for real-life situations during tests. To overcome these challenges, it is crucial to pay close attention during lectures, take detailed notes, and actively engage in practical sessions to fully understand soil behaviour. Additionally, searching for supplementary materials in the library, utilizing online resources, and forming study groups with peers can provide diverse perspectives and deepen understanding.

Overall, the Soil Mechanics and Foundations course is essential for future engineers, ensuring they are well-trained and prepared before entering the professional field.

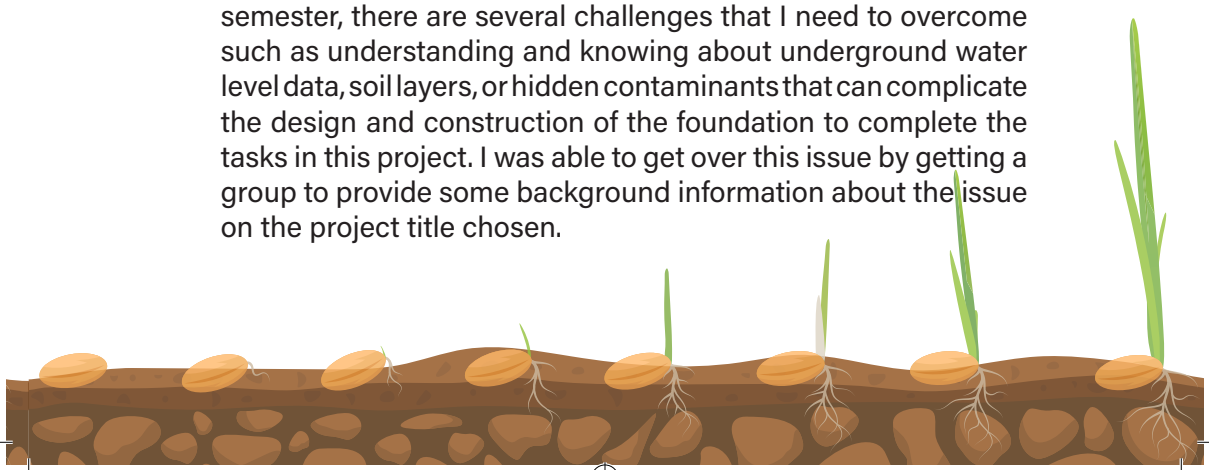


Unearthing Knowledge: My Journey in Soil Mechanics and Foundations

FAQIHAH IWANA KHALID

The Soil Mechanics and Foundation is about focus on the behaviour of soil as a construction material and its suitability for supporting structures. I was able to gain knowledge about the applications of synonymous factor about soil movement and soil mechanics this semester by enrolling in this course. Prior to entering the workforce, this will assist me solidify my knowledge.

This subject taught me about the understanding of soil composition, which includes water, organic matter, mineral content, and water in the context of geotechnical engineering. Other than that, there are a few more things I came across, such the ideas of total stress and effective stress in shear strength of soils. This may ignite a strong curiosity for foundation and soil mechanics. To be able to complete the entire subject for this semester, there are several challenges that I need to overcome such as understanding and knowing about underground water level data, soil layers, or hidden contaminants that can complicate the design and construction of the foundation to complete the tasks in this project. I was able to get over this issue by getting a group to provide some background information about the issue on the project title chosen.

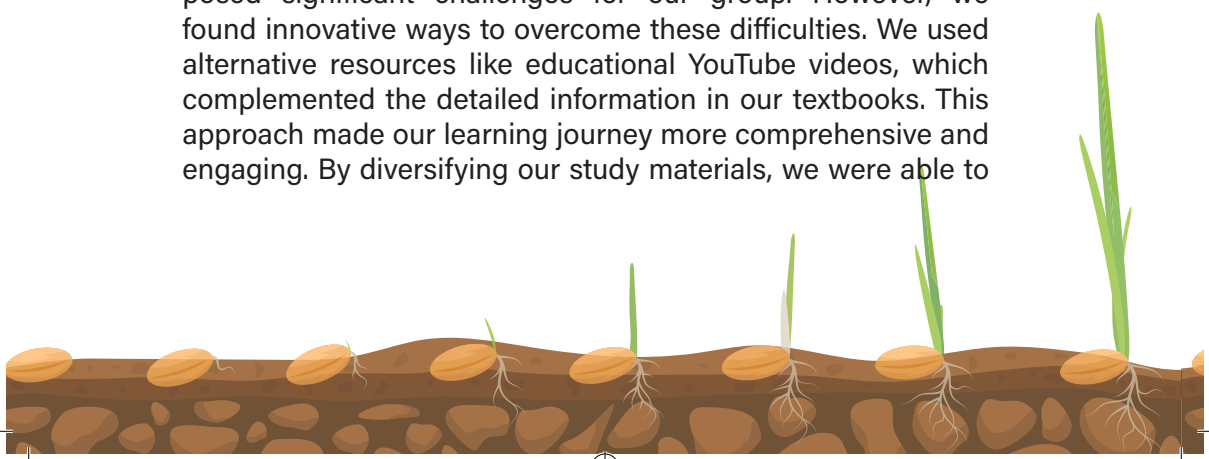


SECTION 3
GROUP 6 -T-REX
Group Essay

Our Journey on Overcoming the Challenges of the SOIL Project

Throughout our Soil Mechanics and Foundation course journey, we delved into various crucial concepts, starting with understanding basic soil properties and advancing to soil formation, classification, and compaction. We explored the complexities of permeability, stress distribution in soils, and the fundamentals of foundation design. Additionally, our studies covered soil consolidation and settlement analysis, significantly enhancing both our theoretical and practical knowledge, which proved invaluable for our course project.

One of the most valuable insights we gained pertained to the properties of soft soil, which was central to our project. Understanding its characteristics was crucial. We discovered that soil mechanics is a complex field, presenting a vast array of knowledge that can be challenging for newcomers. The multiple behaviours and reactions of soil to external factors posed significant challenges for our group. However, we found innovative ways to overcome these difficulties. We used alternative resources like educational YouTube videos, which complemented the detailed information in our textbooks. This approach made our learning journey more comprehensive and engaging. By diversifying our study materials, we were able to



Biography Editor

Tales of Soils: Get Your Hands Dirty, but Make Yourself Brainy

Editorial Board: Just a few words...

Chiam Jing Tong (BNA) I am proud Penangite who loves photography. Originally, I am a biology guy close to mother nature but has since 'coincidentally' become someone studying civil engineering technology (environmental) at FTK, UTHM. I am honoured to have led the student editorial group to compile this book of story-telling by my coursemates, whose experiences in learning Soil Mechanics & Foundations are invaluable for other students undertaking similar core discipline subjects. I believe that if you make a mistake, all you need to do is to learn and outgrow the mistake.

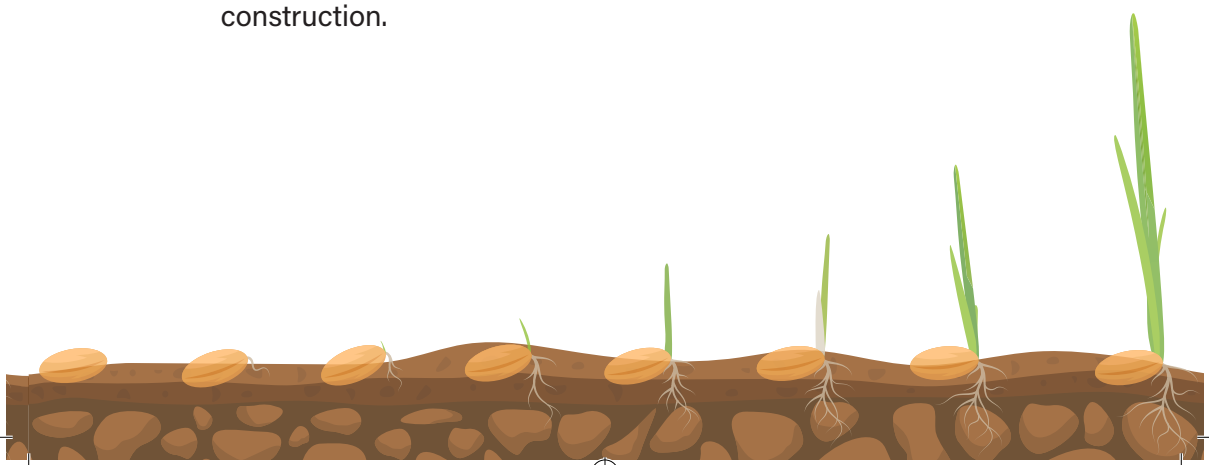
Muhammad Faqree Aiman Bin Mahtar (BNB) As a Kedah native, I have always loved exploring nature. I enjoy fishing and playing the guitar. I am also fairly good at playing the bass and drums. Indeed, I have been writing my own music and playing for 10 years now. These hobbies help me to relax and connect with others. Currently, I am studying Building Services at UTHM. I want to design good maintenance plan to keep buildings fully functional and efficient. My philosophy in life is the advice by Imam Al Ghazali, "To get what you love, you must first be patient with what you hate".

Daniel Zita (BNC) A proud Bumiputera from Sabah with a passion for music, both playing and listening, as well as drawing inspiration from it. From a young age, I have had a clear vision to become an engineering technologist, with dedication to Civil Engineering Technology (Building Services). With continuous growth at its core I am blessed that this dream is turning into reality. I am one of the editors for this book, which I believe would inspire juniors via knowledge and experience sharing. I subscribe to the philosophy that there is always room for improvement, for life is but of constant learning and growth.

Chee-Ming Chan (Prof. Ir. Dr., CEng UK) I am Chee-Ming, the course lecturer who had the great honour, together with my colleagues Pn. Salina and Dr. Hasanah, to guide these boys and their coursemates in their adventure of the Soil Story Wonderland. It is a journey of grit, passion and commitment to excellence, as demonstrated by the students of Soil Mechanics & Foundations at FTK, Semester 2 Session 2023/24. The kids also showed commendable creativity to address the technical challenges in the learning of the subject. Well done to Jing-Tong, Faqree and Daniel: The behind-the-scene heroes for this book, who worked round the clock to have their friends' work published. Finally, kudos to all contributors to the book: May your unique story etched on these pages drive you to greater heights, and inspire others to a fruitful learning experience of their own.

Salina Sani I am an Instructor Engineer at the Department of Civil Engineering Technology, Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia (UTHM), Johor, Malaysia. I am also a principal researcher for Building Environment and Maintenance (BEAM), and an associate researcher at the Sustainable Engineering Technology Research Centre (SETechRC), FTK. I received my Bachelor's Degree in Civil Engineering from Universiti Tun Hussein Onn Malaysia (2020), and Master's in Civil Engineering from the same university (2023). My research areas of interests include numerical modelling, ground improvement and soft soil engineering.

Tuan Noor Hasanah binti Tuan Ismail I am a lecturer at the Department of Civil Engineering Technology, Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia (UTHM), Johor, Malaysia. I received my Bachelor degree from Universiti Tun Hussein Onn Malaysia in Civil and Environmental Engineering, followed by a Ph.D degree in Civil Engineering in 2017 from the same university. I am also the head of the Sustainable Engineering Technology Research Centre. My research interests include geotechnical, soil improvement, sustainable material and product, highway and construction.



Tales of Soils:

Get Your Hands Dirty, but Make Yourself Brainy

Tales of Soils: Get Your Hands Dirty, but Make Yourself Brainy is a compilation of personal, heartwarming stories of self-discovery, learning and growth of student hailing from the SOIL Class, Semester 2 Session 2023/2024. The essays are arranged by sections: It starts with individual aspirations written at the beginning of the semester, followed by a collective group essay as closure at semester end. The stories tell of anxiety for the unchartered waters, worry for the unknown new knowledge base and excitement for the adventure in store, then threads through to the group reflections coming out of the journey after overcoming SOIL perils, EARTH ambush, and GROUND booby traps. We especially hope that future SOIL students would enjoy the book, and find something worthy to take with them on the earthy learning adventure. Happy reading

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