PROFESSORIAL LECTURE PROF Ir. Dr Norlida Buniyamin Engineering Education & Practice in Malaysia

Program

Professorial Lecture Prof Ir Dr Norlida Buniyamin

Kolej Pengajian Kejuruteraan
Tarikh: 23 Ogos 2022

Nama: Professor Ir. Dr. Norlida Buniyamin

Tajuk: Engineering Education & Practice in Malaysia

Jangka masa: 1 Jam 51 Minit 45 Saat

Transkrip:

9:41 : Ladies and gentlemen are welcome to please stand up. Thank you.

10:49 : Please continue to stand up for the Lagu Negaraku. National Anthem Negaraku and Wawasan Setia Warga UITM.

11:01 : Nyanyian lagu Negaraku & Wawasan Setia Warga UITM.

14:12 : Alhamdulillah, thank you and please take your seats. Thank you.

14:27 : Bismillahirrahmanirrahim. Professor Engineer Dr. Norlida Bunyamin, Professor of Electrical Engineering, College of Engineering UITM. Professor Surveyor Engineer Dr. Haji Suhaimi Abdul Talib, Assistant Vice-Chancellor, College of Engineering, UITM.

14:48 : Top Management of UITM, Tan Sri-tan sri, Dato' Sri-dato' sri, Dato'-dato', distinguished guests, ladies and gentlemen. Assalamualaikum warahmatullahi wabarakatuh and a very good morning. Selamat datang.

15:07 : Welcome to the professorial lecture session organized by the College of Engineering, UITM. Today, we are honored to have Professor Engineer Dr. Norlida Bunyamin to deliver her lecture entitled Engineering Education and Practice in Malaysia. Ladies and gentlemen, the ceremony will commence with the recital of dua by Professor Engineer Dr. Ahmad Farid bin Abidin, Head, School of Electrical Engineering, College of Engineering, UITM.

14:48 : Al-Fatihah. Bacaan doa

18:19 : Amin, Ya Rabbil Alamin. Thank you very much, Prof Farid. Distinguished guests, ladies and gentlemen.

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18:29 : With great pleasure, we now call upon Professor Surveyor Engineer Dr. Haji Suhaimi Abdul Talib, Assistant Vice Chancellor, College of Engineering, UITM, to deliver his speech and to introduce our speaker. Dengan penuh hormatnya, dipersilakan. Bismillahirrahmanirrahim.

19:00 : Assalamualaikum warahmatullahi wabarakatuh. Salam sejahtera, salam keluarga UITM. Thank you very much, Associate Professor Technologist Zunairah Haji Murad. Yang berusaha, Professor Dr. Nurazzah Abdul Rahman, Deputy Vice Chancellor for Research, UITM. Yang berusaha, Professor Technologist Dr. Warda Tahir, Director of Curriculum Affairs, representing the Deputy Vice Chancellor for Academic and International. Yang berbahagia, Datuk Wira, Engineer Muhammad Sidek bin Ahmad.

19:44 : Yang berbahagia, First Admiral Datuk Engineer Haji Ahmad Murad Haji Omar. Yang berbahagia, Datuk Professor Engineer Dr. Kamal Nasharuddin Mustapha, Top Management of College of Engineering of UITM. Tan Sri, Tan Sri, Datuk Sri, Datuk Sri, Datuk Datuk, all distinguished guests and my dearest warga college who are following us online this very moment.

20:19 : Ladies and gentlemen, Alhamdulillah, all praises are to Allah, the Merciful, all beneficent, by whose grace and blessings have enabled us to gather here today for our UITM Professorial Lecture entitled Engineering Practice and Education in Malaysia by Professor Engineer Dr. Nolida Bunyamin from the School of Electrical Engineering, College of Engineering, University of Technology, Malaysia. She will be talking to us about an insightful and brief description of evolution of the practice of engineering and engineering education in Malaysia. Before we invite Prof. Nolida to give her professorial lecture, allow me to read her biography.

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21:12 : Prof. Nolida graduated from the University of Adelaide, Australia with a Bachelor's Degree in Electrical and Electronic Engineering with honours. She was a research fellow with the Malaysian Institute of Micro-Electronic Systems, MIMOS, before joining University of Technology, Mara in 1988. At that time, we were known as Institute Technology, Mara.

21:37 : Coincidentally, we joined in the same year. She then obtained an MSc Industrial Control System in 1992 and a PhD in Knowledge Management for Manufacturing Enterprises in 2004 from University of Manchester Institute of Science and Technology, UMIS, in the United Kingdom. Prof. Nolida is currently a board member of the Board of Engineers Malaysia and the Engineering Technology Accreditation Council Chairman.

22:09 : She is also the President of the Institution of Engineers Malaysia, a Fellow of the Institution of Engineers Malaysia, Honorary Fellow of the ASEAN Federation of Engineering Organisation, well known as AFIO. In 2022, she was appointed as the Governing Board Member of AFIO and the Governing Board Member of the Federation of Engineering Institutions of Asia and the Pacific. She is also involved in accreditation of engineering programmes and mobility of nation engineers in ASEAN and internationally.

22:45 : Her current research interest is in industrial automation and robotics, biomedical engineering, knowledge management and engineering education. Ladies and gentlemen, the two pages given to me does not do justice to describe Prof. Nolida. And she has done us proud.

23:10 : She is the third IEM President to have come from UITM and the first lady to lead the prestigious institution. They say that a picture paints a thousand words. I think pictures and video captions would do justice to Prof. Nolida.

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23:34 : There will be a million words in that montage that we are about to see. So allow me to further introduce Prof. Nolida through this montage that has been prepared by the College. Prof. Nolida

24:11 : I have known Prof. Nolida for more than 30 years. And upon reflecting, I think my first encounter with Prof. Nolida was when we had to invigilate together during an examination. And during that first meeting with Nolida, she brought along a book that she had recently bought. And she was going through the book and saying that this book is marvellous. This book is so interesting and all that. And at that point of time, it registered in my mind that she is a very passionate person. And I was surprised with Prof. Nolida on another occasion when I learned that she has a hobby of horse riding.

25:02 : And immediately upon learning that she has a passion for horse riding, I can easily identify that she is a person of discipline, she is a person of resilience, and she is a person of strong focus with stamina to see whatever that she is determined to do to become a reality. So this is her characteristics that I have observed in Prof. Nolida. And I have also noticed that she is not a person who smiles regularly, but when she sees something that is pleasing or something that is being done up to a certain standard that is of exemplary, and she will break out and smile. And I believe that that smile is her way of expressing approval of what is being done. And it is my pleasure and privilege to be her colleague. Thank you.

26:26 : Alhamdulillah, in terms of professional engineering, more or less 50 people. This is a very big contribution from the prof. to the electrical engineering students, which means that it will be a source of mentoring for him in terms of obtaining a degree in professional engineering. Hopefully, with him in that field, there will be a foundation and a path for Allah SWT.

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27:01 : She is very passionate in teaching a course which is automations and robotics and actively involved in professional bodies. She is the one who initiated our Masters in Engineering Education, which will be offered in September 2023. I think it has been a great pleasure having her in our school.

27:26 : When we started to organise a conference, an international conference on engineering education in 2010, then we started to work together very closely. And the conference also has been organised every year till 2019 before the pandemic. She is very passionate on engineering education and she always encourages young lecturers to do research in engineering education so that we can improve our curriculum design, our delivery. She is very knowledgeable on this area. And being active with IEM, she knows all the regulations. I do think that she has a lot to share with all of us.

28:15 : To me, Prof Nolida is a person who is a game changer. She is a person who doesn't follow the flow and always wanted to think how to do things better. That makes her very different from others. And she has a very strong opinion about things. And because of this, that's why she started a lot of things. For example, in our faculty, she suggested to start a Masters in Engineering Education programme. Another thing about Prof Nolida is that she is a collaborator. She has a strong network of people that she collaborates with. You can see that she is strongly connected to people in Japan, people in China and many, many other countries. That's why she is a visiting professor to Kanazawa University. And you can see that she is very passionate. In terms of sports, to me, one of the things that is very dear to her is horse riding. She is quite well-rounded in many areas.

29:18 : I've known Prof Nolida since 1992, when I first joined IIT M. We were very close friends. In fact, we travelled together because we were both single at that time. So one thing about Prof Nolida, at that time, she loved to eat. And she was the one who introduced me to eat oyster. If I didn't know her, I probably wouldn't try oyster. So after I tried that, I loved it. So we travelled together, we went to Bali, we went to Japan. It was good companionship with her. And thank you very much for being a friend. And I hope we can stay friends forever, till death do us apart.

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30:08 : Ladies and gentlemen, I give you the lady, the IIM president, and the professor from the College of Engineering, Professor and Senior Dr Nolida, to deliver her professorial lecture entitled Engineering Practice and Education in Malaysia. Welcome, Prof.

30:43 : Thank you very much for all the messages and so forth. It's very, very touching. And I find that this is very touching. And thank you, Prof N.C., for doing this. And, of course, to my colleagues, especially those from SYSTEM. Well, I joined in 1988. And I was very, very lucky to work in a very small – SYSTEM is quite small. We have about 30 lecturers. We know each other. And, actually, within this group, we actually work very close together, and we move together. And I'm very happy. Anyway, can I have the clicker? I'm the type who likes to go straight into things when I do something.

31:28 : Okay, is it on? I would probably like to move around a little bit. Hello? So, when I started this, I actually had another book that I wrote on automation and robotics. And then, suddenly, we combined into a college. So I scraped that book, tossed it off, and looked for something that would be of interest to all the four faculties. And, of course, the thing that tied us all together is we are educators. And then, all right, we are educators. And I looked at another thing that I was looking for a gap that everybody requires. And I think that we are lecturers. And so how is it that we will fulfill what students require? So that is why I'm going to talk about engineering and practice in Malaysia.

32:21 : I'm going to give you some reviews. Let's see whether I can get them. Okay, so this is the presentation outline, an overview on engineering practice and engineering education in Malaysia. So that's going to tell you where we come from. You should be proud that we are engineers. And for those non-engineers there, of course, you should be proud of what you are. An overview of how professional engineering associations, three bodies, and other stakeholders shape the teaching of engineering in Malaysia. Networking and mobility, roles and roles, and what is it that it takes to become an ideal lecturer. Now, you may or may not agree with me, but what I talk about is based on a survey carried out in 2018.

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33:11 : Another objective of the book is actually to give a little bit of guidance to engineering educators, lecturers, not only in the universities but also in the polytechnics and so forth. How do you equip yourself to be the best, to be ideal? I think that's something that's missing. And a lot of lecturers miss out on that because when they started as a lecturer, they were looking just as a lecturer, but remember, we are also engineers. Okay, so anyway, let's get into it. What is engineering? I suppose I don't really need to tell everybody in here. Most of us are engineers.

33:48 : Engineering is in the field of discipline, practice, profession, and art. That's why we are innovative and we make great things that relate to the development, acquisition, and application of technical, scientific, and mathematical knowledge about understanding, design, development, invention, something we are pushing our students for, innovation, and we use materials, machines, structures, systems, and processes for specific purposes. Engineering is, in other words, technicus for the technologists.

34:30 : In Malaysia, we look at engineering technologists and engineers at the same level, except that their focus is slightly different, and how they work is slightly different. We will go through that a little bit later. All right, so engineering, what do we do? Okay, society and nature, that's us. We live in a society and we live in nature. We have needs, and we engineers give society and nature products, and they benefit from our work. And from nature, we get resources. We get the oil. We get the timber. We get all the energy resources, the solar power.

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35:16 : And through sciences and theories, and of course through technology and tools, we engineers turn them into products and benefits. So sometimes there's a question, are engineers scientists, or are scientists engineers? Very thin line, but I think engineers predict, I mean, it's before scientists. We'll go into that in a little bit more detail later. Okay, Malaya. We were agriculture-based, and engineers built the nation. So all of us should be proud. We helped the nation, Malaysia, move from being a poor country, reliant on agriculture. And let us look. In the early years, 70s, 80s, we left behind all our competitors.

36:13 : I say all our neighbors, the Vietnams, Cambodia, and so forth. And who was it who helped to do that? The engineers. Pre-independence, and in 1900s, look at how early we are. Even in 1928, we had the Chindro Hydroelectrics. We had the first railway in 1885. And then also some game changer. We built our Penang Bridge in 1985. Of course, Penang Bridge, we'll give the credit to the civil engineers, and to the mechanical engineers. But engineering, we do not work alone. We work within the fraternity. However, I'm going to focus a bit more on electrical today. So, in the 1970s, the world economy had a different direction.

37:09 : Global market, open markets. So, in the 70s, 80s, we had cars coming in from Japan, goods coming in from Germany, and so forth. So, what is movement of people, knowledge, and goods? All the production. However, in those countries, those developed countries, with the engineers who are design engineers and so forth, except that they couldn't build their high cost of labor. So, they moved to us. So, the first one was in 1972. And at that time, the first eight companies that came in, I've just put in the first four. Motorola, EMD, HP Hitachi, electrical base. Yeah? And contributions of electrical engineers, nation building.

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38:04 : We helped build the country. We helped to bring in the investment. And that is how we grow so fast. At that time, early 70s, petrol is about to start, but not quite. Have a look at this. 2019, just before the pandemic, guess who exported the most? Electrical and electric products. 37.78% or 986.4 billion. We always hear about petroleum and petroleum products. Actually, the EME industry is the one that exported the most, prior to the pandemic.

38:48 : So, electrical engineers, you can pat your head. You have produced graduates to actually work to produce stuff. Also, our graduates. But look at how important we are to nation building. And look at how important your job is to produce the right graduates to be able to continue this. Facing a lot of competition now from Vietnam, from Cambodia. And if we are not careful, we will lose the edge. Okay, so this is how we moved. Initially, EME. I'm just looking at EME for today. 1970s until now. I came in here, 1980s. That's when I graduated. And then at this stage, there's a quick jump. So, from here and here, before 1980s, engineers probably just work like the technologists now.

39:52 : We work in the companies. We make the products. Knowledge-wise, we don't contribute to the design of the product and so forth. However, we are now here. And we need to go further. And with that, different sort of education is required. Different quality of engineers is required. And with different quality of engineering where it is required, guess what? We, ourselves, engineering lecturers, is also required to change best. The best to get the best. Are you getting this? Oh, is it moving too much? You want me to stand there? All right. All right, is this much better? All right. Okay, so have a look at that.

40:56 : We were fortunate. Our government then, of course now as well, they had plans. So, 1980s, 1960s, they had national development plans of how to get labours for the industries. I came in at about this time. I don't know about you, Dato' Wirai. Did you come from here? Sorry, just teasing you again. And then, of course, knowledge economy. And we are moving towards here. So, this is a relation framework. As we move from agriculture base to economy of knowledge, our engineers need to give input of knowledge to produce the product, not just labour. We are skilled labourers. And let us look at how different we have to teach.

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41:47 : Here, they have plans to be able to do that. And the Malaysian government in the early 80s realised that he produced so many goods. But the design didn't come from us. The products didn't come from us. We were just skilled engineering labourers running factories for people, building goods for people. So, this is an example of one of the national development plans, MIMOS, to create an industry where the products came from Malaysia, designed in Malaysia by Malaysian engineers.

42:32 : And one thing that you should be proud about MIMOS is it came from the ideas from five lecturers who were doing policies at that time. Tengku Azman Sharifuddin from University Malaya, Tengku Arifnan, no, not Tengku Arifnan, Dato Arifnan, they were all my bosses then. I actually came back from Australia to join this directly to do the first manufacturing chip because they wanted to actually push Malaysia into it. So, I came home. So, let's have a look. So, in the early years, there was some success. We had the first year. At that time, remember, 1985, 1986, 1987, we were proud. Even if Singapore didn't have the internet, we did.

43:24 : But look at us now. Why are we behind? Is it because the graduates we're producing is no good? Why were we good then? We were in front, early 80s. Now, we're slipping back and there's a danger of us slipping further and further back. And to stop that, it starts with us because we need to produce the graduates that will pull us back forward to be the first. All right, so just some examples of what the government did at that time. So, they brought back a bunch of engineers from overseas and also from Malaysia.

44:01 : They trained them. I was fortunate to be one of the earliest. I joined MIMOS in 1986. I got trained in HP. I got trained in Sapura. Under various engineers, I was trained by Khalilul Rahman, for example, the chief engineer of Sapura. I did the first telephone and so forth. So, they created quite a lot. MIMOS now is moving forward and is still there. That is just one of the initiatives that is taken by the government. However, now, we have it in all universities and we lecturers can make use of that to produce what was required in the 1980s. We could accelerate the production of these creative engineers, innovative engineers.

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44:47 : And that comes with education. How we teach will be our product, the graduates, and the outcomes of the graduates. What they learn is controlled by us. So, our job is actually very, very important because in the end, we go back to helping the nation. All right, so this is what I've just said. In the earlier years, 70s, 80s, very easy. Engineers just do one thing. Civil engineers, you just do the roads. In electrical, you produce electricity and so forth. But now, the task of one engineer or one type of engineer is integrated to different tasks. We need to be a civil engineer, but we need to know quite a bit about computers because we are now using tools that require knowledge in computing. We require communication with other engineers and so forth.

45:48 : So, these sort of graduates are different from the graduates that were produced in the 60s, 70s, and so forth. And that comes with the way we teach. Why I'm talking about this is the last chapter, you will need to relate it to these parts, yeah? So, modern engineers, let's see what they do. Integration of various disciplines, expertise and knowledge, and ability to use this bit here, new tools, due to the rapid emergence of technology. I mean, last time, you know, you're engineers. We need to draw the drawings.

46:26 : We need to do simulation, and we just do one design. We don't even go to the age of the design for cost-saving because we have to do the mathematics and so forth manually. With new tools, we can go to the age. We can get cost savings. But we need to have our students to want to go to the age, to want to use new tools. And that is another thing that we have to do.

46:53 : The motivation of the young graduates, our students, is to have this thing to be the best and to do the best, not only to solve a problem, okay? And the second one is we need to be the best. Competition due to the global market and requirement of mobility. To enable our students to move from one country to another country, our graduates must not only be on par with other graduates internationally, we should be the best, okay? So these few slides is just an introduction of why we need to be recognized, why we need to teach in a certain way. So just bear in mind what we say. All right, so what is this? Yes, so let us have a look at a little bit about how engineering education started in Malaysia. 31st August 1957 is when we achieved independence.

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47:54 : At that time, we have only technical colleges and in Malaysia engineering technician assistant level only, okay? And this is based in JKR. And they get these technicians from Malayan Railway, Soviet Department, and as you can see, all the education is given to engineering fraternity to help the nation build the infrastructure for us to grow, to be developed, and to be able to do better things. And then upon 1957, before that, all the Malaysian companies are run by British engineers.

48:40 : They gave us a good legacy and they helped to provide for us a good platform for our education. And then of course our government wanted Malaysianization and our first few Malaysian engineers, they went to England, to Britain, to learn. And TMB was one of the first few. They sent a few and most of them actually came back, left Malaysia. We were quite fortunate. We had one, Tan Sri Ahmad Zaidi Laidin, also one that was sent off to UK, I think Brighton College.

49:21 : Datuk Wira, is that right? Datuk Wira here is also one of those chosen to lead Malaysia to become Malaysianization of Malaysian engineers. So in the early years, they are British trained. And then of course, UM came. Yeah, University of Malaya. At that time we were Malaya. University of Malaya was of course based in Singapore. Yeah, 1949. From King Edward College of Medicine and Raffles College. And then in 1958, UN moved to Kuala Lumpur and that's when the first engineering college is established.

50:05 : The Um in Singapore then evolved and became NUS, National University of Singapore. So remember, we were the same. We came from the same line. Our education and the quality. So maybe we should ask ourselves, are we on par? Or are we better? Or are we lower from NUS? We came from the same background. So I'm afraid we all need to think how we have done.

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50:38 : Okay? And look at this. 1958, civil engineering. Of course civil engineering first. They were the most important engineers at that time. They built Malaysia. They built the railway. They built the roads. And they enabled us to grow. And then came the mechanical, closely followed by electrical and chemical. Look at that. The first batch of electrical students in UM. Six graduates in 1963.

51:08 : I was born in 1963. So at that time, first six graduates. And we have grown very, very big now. And of course, I mustn't fail to mention UITM. We are now the biggest. We were formed because of this. All right? And because of that, we have one more thing other than producing graduates, engineering graduates, we have to help a lot of our, how do I say, Malaysians who are poorer, who don't have the chance to get education. So we must be better. In UITM, we must be a better lecturer because we may not get the best.

52:00 : But we must produce the best. And therefore, we have to learn to be the best lecturers. And we started, of course, as a little college called Dewan Latihan Reda. I'm not sure whether I should go through this. Shall we just skip it? Most of you know about our history. I think when you come to UITM, this is what you need to do.

52:21 : Okay. So let's go into what we need. Why I did this book is I want to familiarize the young engineers, who may not be an engineer before they become a lecturer, of how to become a professional engineer. So we will look at how you achieve recognition, how you achieve mobility. And when you combine all of this, how do you become an ideal lecturer? So we are going to introduce, first, engineering association and regulators, and, of course, a bit of history. This guy here, he is Tan Sri Haji Yusof bin Haji Ibrahim.

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53:05 : He's, of course, the first IEM president. Now, 1960s, this man and a few engineers say, hey, we need an association to guard Malaysia. At that time, we have this. This group of association from Britain that governs our engineers and regulates our engineers. Now, they wanted to actually do be the one that controls the submission of engineering drawings, that control who. In fact, at that time, if you want to work in University of Malaya as a lecturer, you need to—Professor Gray, for example. Maybe Prof. Yasmin might have the history over there. To become a lecturer in University of Malaya, you need to be a member, a professional member of ICE, civil engineer, at that time. So, hey, why are we Malaysians doing that? So this Tan Sri Yusof said, let's get an association.

54:11 : Let's make sure we control our own engineers, and we control how things are done. So he then set up the Institution of Engineers together with a few people. And that is the motivation. A move by the British engineers wanting to keep local engineers from being independent. So we went to become independent from the British association, and now we are equal with them. So if you were to see in an organization, international organization, we are already equal. There was a big fight then, in the 60s. So, of course, at that time, IEM 1959, with the objective is to promote and advance the science and profession of all aspects of engineering. We'll learn a bit more.

55:09 : And also in this lecture, I'm going to show you things, what IEM do, how IEM do, and for you, young lecturers, to actually look at how you can learn and how you can grow together with the association to become a better engineer. Your networking, once you work with the association, well, it could be other associations, of course, but being the president of IEM, I'm going to focus on IEM. IEM is also the secretariat for the ASEAN Federation of Engineering Organization. There's about 10 countries in ASEAN, and another 24 to 30 countries in FIAP. So we work closely with all these ASEAN countries. We network, and we learn together.

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55:57 : You will see what are the things that we do later on. So these are our objectives. First inaugural of IEM, 1958, where there was only 39 engineers. Now we have 50,000 members. And this is what IEM is to do. It's in the constitution. You read each and every thing, to hold meetings, exhibitions, and visits, such as activities. This is interesting. Conducive to the promotion and attainment of profession of engineers. Second one, to raise character, status, advance, and interest of the profession of engineering. Promote honorable practice and ethics. Communicate to members on all matters affecting the profession.

56:50 : Print, publish issues, and circulate publications, which is conducive to the objective of the institution, and to do such things as the institution may think incidental or conducive. So if you're young, you just started as a graduate engineer, you suddenly come to teach, and you've never been an engineer before, join, because with that you are exposed to a network of engineers with experience. And when the activities are conducted, you will be pulled into it, and you will learn with it. The growth, 1965, we had 197, 2201, 47,000, and now we are 50,000. There is, I think at the moment, 13, no, about 8 or 9 branches. And this is more interesting here.

57:48 : Male to female, 25% overall, but for MIEM, full members with professional status, less than 10%. And so we have to move. Ladies, although there are more ladies in this room rather than men, I think there's what, only about 20% men. So it's the other way around. And this is the structure. We have a council, ESCOM, standing committee.

58:18 : There's eight standing committees that look after all of this. We have a few vice presidents over here that are looking after all of this. Now, what is of interest is this.

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58:29 : Technical division, special interest group, young women engineers and young engineers. But here, you have technical division on electrical engineering, civil engineering, biomedical, and that is where you network, and that is where you join and have the activities, and that is where you learn. So, of course, these are some examples of the areas that some of the members work on.The recent position papers produced by MIEM for the government, where the government worked on it. And, of course, we are involved in many national and international organizations. Open up ASEAN for you, for example, for you to link with one another.

59:14 : Okay, so if I were to summarize, we give evening talks, technical visits, look at all the learning possibilities that you can have, and also for you to develop leadership when you are there as well. And, of course, unfortunately, it's done in the evening, which is why sometimes it deters many young engineering lecturers from joining in. But, you know, spend a few evenings, and you will gain quite a bit. This one especially, yeah. A lot of project sites are open to us, but not open to others. Okay, so examples of the talks that we do, we also do STEM talks to bring in more young children to engineering.

1:00:07 : Okay, then, of course, IEM continued working, and then in 1967, sorry, 1959, a group in IEM said, we cannot just become an association, we must be also the regulatory body so we can force engineers to certain regulations, to follow ethics, to do design in a certain way. So a group of members of IEM came up with a bill, an engineers' bill. It was tabled in Parliament, and with that, the Board of Engineers of Malaysia was born. The Board of Engineers of Malaysia was born in 1967, but implemented in 1962. The vision, authoritative body of international standing that regulates engineering practices, and the mission, regulate engineering services conforming to professional ethics and international best practice in ensuring public safety. So two things help engineers in this country.

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1:01:18 : The association, IEM, MISAT, TEM, and the regulator. Well, regulator don't really look well. In certain ways, look after your welfare, but the regulator ensures that you behave in a way that you do not endanger the public. So the regulations come up from there, how you behave comes from there, and the discipline comes from there as well. The BEM can actually take away your license, can actually suspend you if you misbehave. There's many rules to that.

1:01:54 : And of course, if you're not registered with the board, you shouldn't be sitting here and working in this university, because it's not allowed. You cannot practice as an engineering lecturer without registering with the board. And in 2015, these are the categories under the Board of Engineers. I'm not going to go through it a lot, because I would prefer to pay a lot more attention in the last chapter. And this is how the board is divided. And as you can see, look at this level here.

1:02:29 : These are the guys that discipline you, and we also monitor certain things for the accords, the agreements, and so forth. This can be another story about what the board does and how it affects you as an engineer. Okay, so just one example. The ENQ, examination and qualification committee, ensures from a graduate level how you become a professional engineer or a professional technologist, although this bit here is not done yet, because we are not full signatories of the agreements of IEA. We have this part, right? And at the moment, engineering technologists do this bridging part, but as soon as we become full signatory, we will probably have the technologists go up this way. And of course, the government looks at engineering technologists and engineering as equal in terms of pay.

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1:03:39 : And this is, of course, at the board, we have the accreditation councils for both the engineers and the engineering technologists, and of course, all the various committees that does that. Again, I'm not going to go through that in detail. The objective is for you to know what is there, what you should know, and then we may have different sessions later on. Professional recognition, mobility and networking. Why do we need it? And how will it impact us? And how will it impact our students? Profession, let us go. Very, very fundamental.

1:04:24 : It refers to a job or work that needs special training or skills. And in most cases, of course, a high-level education for us and a knowledge in certain areas. So these are examples. Engineering technologists, architects, lawyers and doctors. I don't know about this one. Oh, I hope there's no lawyers here. So we are here. Now, when you have this special training, you must also have a regulator to look after you or to discipline you. Individuals that work in a profession are usually regulated and it's important to add ethical standards, technical standards and practices.

1:05:08 : So in Malaysia, we have Board of Engineers for engineers, Board of Architects, and of course, similarly in all the countries around us, they have their own boards as regulators. For example, the Board of Engineers has very close contact with the Board of Singapore and we have a yearly meeting with them. At one stage, the Board of Singapore and the Board of VM, we wanted to actually do some fundamental, pass all the exams in your university, take another exam, fundamental examination, to ensure that you are of a certain standard.

1:05:45 : But we were shot down on that. Not many universities or colleges wanted to have a FEE after the, I suppose, you know. I was pushing for it because I was a bit worried about the private colleges and the standards, but that was a long time ago. So the boards work closely together. This is later on to ensure mobility. So what is professional recognition? We talk about professional recognition, so let's know what it is.

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1:06:18 : Yeah, it's a recognition of an individual professional status must be regulated and provide a person that is recognized due to their qualification, this is a bit, the right to practice in certain areas and certain regions. So if you have a PE only, professional engineer, you have the right to practice in Malaysia. You're right, you have a right to practice a certain level. If you are a PE and you are a PEPC, it's different. Okay, we will go into that in detail. So recognition, both the regulators and the association can give a recognition.

1:06:58 : In Malaysia, yeah, of course BEM is the one that all give professional recognition. And of course there are also recognition by AFEO and recognition by IEA. And this is the one that we benchmark our engineering education on. And with the IEA recognition, the region where your degree is recognized is white. Mobility, the right for mobility is when a person move from one job to another or talent moving to another job. I just want to give you this definition because we will be using this term later on. Okay, so we're going to look at international professional and competency recognition. I think everybody here knows about the IEA. We've been doing all our CQI, our OBE and so forth.

1:07:54 : I know there's quite a lot of resistance in that because of the lot of paperwork to be done, right? So IEA sets a standard of how education must be taught, engineering education, and sets a standard of competency of an engineer and how they can practice and where they can practice. So this is just a mapping. So if your degree is Washington, you become an engineer. Sydney, you become a technologist. And if you're Dublin, you become a technician. At the moment, this term here is not out in the IEA yet, but hopefully in 2024 it will be included in the IEA.

1:08:37 : Okay, so the BEM, the Accords, the BEM is a signatory to the Accords, which is why EAC and ETAC is under the BEM. Agreements is under the IEM, which is why all the professional status, we have the PR interview where we actually, once you pass that, you can become a full member and you can apply for APEC engineer or international engineer. And this is the, all of this here enables you to be able to be recognized and to be mobile in certain regions.

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1:09:17 : To be able to be recognized as an engineer in certain regions, you must graduate from a university that has accreditation over here, right? So International Engineer Alliance, if I'm going to summarize, sets a standard for engineering education and this education gives an outcome that sets a standard for competency and engineering practice. Okay, so the two is linked. You cannot come from a non-Washington Accords accredited program and be part of this organization. Okay, so these are the countries that sign IEA. You can go to the IEA website and learn a little bit more there. And these are the regions where we can practice in and so forth.

1:10:10 : So APEC engineer is from the agreements from IEA and your recognition is from an association. Okay, and then why do you want a register, yeah? So when you are part of an agreement, so you agree, signatories within the agreement who signed the agreement have this. Engineers in this register should have their competence recognized in all of the economies. So if you go to Australia, you go to UK, the degree in Malaysia is recognized. You can do a bachelor degree in Malaysia and it's recognized for a master's or a PhD there. I mean, if from a country like Timbuktu, who's not in the agreements of Accords Agreement, or Accords, you cannot go because they will have to re-evaluate your degree.

1:11:09 : And of course, for the agreements, you can practice and reduce barriers and ease the process for engineers to gain access to work and practice. So if you're an APEC engineer or AE, it's much easier for you to work in this country because your competency is recognized to a certain level. I'm gonna go through this very, very fast because I can see that I'm a little bit slow. So to be able to be there, these are the competencies that you must have. And of course, the minimum seven years practical experience during graduation is a must. And also, two years in responsible charge and significant, you will be assessed.

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1:11:53 : So go for it. Go for it early in your career. And the same, you know. Now let's look at ASEAN first. The IEA is international, other countries. This is also international, but at the ASEAN level. It is important because we work closely together. In fact, with the new capital city of Indonesia coming next to us, our engineer, Sabah Sarawak, it's open to you to go and work there. These are the countries. And these are all the recognition that you can get as an ASEAN engineer. There's two types of recognition. One is from regulators.

1:12:41 : Yeah, that is called ACPE. And one is from the association. Here, the regulators of all the countries within ASEAN got together, and they evaluate whether you are good enough to be given ACPE recognition. And this one is association within ASEAN countries that evaluate whether you'll be given AE, ASEAN engineers. So I'm quite happy that in the electrical faculty, we have many of these. PM Zunaira, our emcee, is also one of them. And quite a few. Oh, there she is. Yeah, and we have quite a few.

So I hope that the other faculties or the others within our college now goes into it. Because once you are there, then the networking together is very, very close. So these are more details about how it was done. We have the recognition by the regulators. This is the aim. Facilitate mobility of engineering service professionals and exchange information in order to promote adoption of best practices, standards, and qualifications. There's the register. And this is what you have to be to be able to be accepted. Yeah, I will just go through very fast.

1:14:07 : All right, and the benefits. Yeah, here. ACPE, opportunity to have your professional status recognized. So if you are an ACPE, behind your name, you go to Myanmar, you go to Cambodia, you have ACPE, they know that you have already got at least seven years behind you. You have at least two years of very complex experience, and so forth. And it adds value to your professional career. And you are eligible to register in that country as a foreign professional engineer, RFPE. Let's say you want to migrate to Cambodia, register with their regulator. And of course, you have the opportunities.

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1:14:56 : These are also the statistics of how many there are. And now, a little bit more detail for AFIO, because IEM is the secretariat for AFIO. Okay, what is AFIO? I've gone through that earlier. The same thing. Facilitate mobility of engineers within ASEAN countries. But recognition is from association within ASEAN, compared to ACPE by regulators. Now, there is two different things. By the ACPE, because you are from regulators, there are not many people within the regulators for you to join activities. However, when you're with association, IEM has 50,000, Singapore has about 40,000.

1:15:43 : So there are a lot of members for you to network with. So as an ASEAN engineer, there are more, how do I say, activities and networking that is done. I'll give you some examples.So these are just some history. We started in 1973. And IEM and IES actually started this. We wanted to work closely, but of course, we come from the same Malaya. So we work closely. And then subsequently, all the other countries come in. So ASEAN engineers are in the database of what we call AER. And in 2022, this year is the 40th ASEAN anniversary. And we are going to launch our 40th book in Johor Bahru this Thursday, I think.

1:16:30 : So member countries, all of you know what is ASEAN. I'm going to go through very fast. This is the objective, and of course, again, the benefits. I'll let you read that for a while. This is important. And this is also very important. I suppose all is important. This bit here. This is very nice, actually, for me to go. For me, my experience, if I go to Singapore, if I go to Thailand, I always have friends. I have friends in those universities as well. I need something I can call the friends.

1:17:08 : And, of course, at the engineer level, it's also the same. So at the moment, there's 10,000. So it was done in 1998 for the mobility of ASEAN. So if you are in this register, you are recognized within the 10 countries. These are the objectives. Again, to encourage continuous updating of the quality of engineers by setting, monitoring, and reviewing standards. We are looking at also doing an ASEAN standards, which I will talk to you about. So this is how. Again, from here, from just being ASEAN engineers, it's already opened up to ASEAN technologies and ASEAN technicians.

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1:17:52 : A lot of opportunities for those teaching diploma students to actually network together and send your students for six-month training in Myanmar and accept six months for them over here. So this networking is already in the standard on an education working group in our field. These are the numbers. Again, I'm not going to have a look at that. And these are, of course, the benefits. If you are an ASEAN engineer, bigger market.

1:18:23 : You can work all ASEAN, better employment, greater avenue for sharing your knowledge. Of course, this bit, if you are selling it. I'm going to show you some pictures of when we go for meetings, how we enable companies in Malaysia to do pitching of their products to all the ASEAN countries. Of course, networking, as I keep saying, and more potential. Don't think that it is not for educationists. You network a lot with your members, academic members, at other universities within the region.

1:19:02 : So, potential. These are for employees, this one. And this is for service providers. These are the benefits that you get. Look at it. Look at it. This is all that we need. Even as a lecturer. The network that you get. So, very quickly, I will need to move a little bit faster. Working groups over here, we do this as well. We work together. This is an example where, within the ten ASEAN countries, we are doing a standard. Hopefully, the standard will be out. For example, if I want to go and work in the Philippines, it's terrible, because, for example, the standards are different.

1:19:53 : We call grounding, they call earthing. We have different standards. They are more American, we are more British. So, within ASEAN, we are working on doing standards, and we are doing standards for all of this. And join in and be part of the team that do the standards for ASEAN. Once the standards are adopted, an engineer from Malaysia can move to the Philippines, and same standards. These are the things that we do. And these are the things that you should be involved in. So, we launched it in 2018.

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1:20:29 : I can't remember. This is harmonizing standards across all member nations. Use the same standards. We are ASEAN. The thing is to facilitate the mobility. It's quite a bit, so we are almost finished with this, but we are, of course, always looking for lecturers, especially because you like writing and you like looking at things.

1:20:55 : Those in the profession that are working with industries, they are not really into writing. These are certain networking sessions that we have. In IEM, we get a lot of funding from MITI, MATRID to bring our members to do exhibitions. This, I think, is in Singapore. Or is it, yeah. We go to Bali, Singapore, and so forth. Join in. In fact, our graduate school can take a booth. IEM gives you $10,000 to offer education services.

1:21:32 : Of course, medal presentations. And, of course, we didn't stop when there was a pandemic. We did things online. This is something that I find that is also interesting. Being a part of an association that is not in one country, twice a year, in our field, we do product pitching and services. I think this is Dr. Wong from Multimedia. He had a design that you can send on the internet line through the wiring. He pitched that. This is the main concept.

1:22:12 : They pitched to do dams in Vietnam, and Cambodia was very interested in that pitching. So you can get jobs. You can get things done. Various other activities. But, of course, it's not only work. We do sports and cultural activities as well. We have games that we play together. Or we go cycling. Or sometimes Malaysia says to Cambodia, hey, a bunch of our young engineers is coming. Can you host us? So they bring you to see whatever they have over there, dams or whatever you want to visit. Then you also have things that you do together that is fun. And that exposes you.

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1:22:58 : And if you bring your student along, it brings exposure to you. Okay, so we get closer and closer to what I want to talk about. Engineering education in Malaysia. The term education, of course, I'm not going to spend time on this. All of you are here. Now, what I want to talk to you about is engineering programs in polytechnics, colleges, community colleges, industrial training colleges, teaching, and so forth.

1:23:25 : So we produce engineers or engineering fraternity of different levels which need different ways of education. And, of course, the new type of engineers, engineering education is now very essential. I mean, if you want to teach a mechatronics engineer or a biomedical engineer, it's not as straightforward as teaching an electrical engineer. Even now, a civil engineer is not straightforward because you have structural engineers, you have geotechnical engineers, and so forth. So you need to see that the program and the name collaborates or correlates very well. And the subjects that is taught and how much practical training is there. So what you need is accreditation of engineering. We have been very lucky because we have been doing it for a long time. We started in 1957 by the PSD.

1:24:26 : And then, this is one reason IEM was created in 1959, to ensure quality for engineers. And, of course, IEM did accreditation. Objective of accreditation, I'm going to just go through that. Let you read it for half a minute. If you don't agree to it, raise up your hand. Okay? We shall move forward then. Okay, so look at us. 1957, we were already doing accreditation. That is why we didn't decide to be quality engineers just for infrastructure building. 1959, accreditation is by IEM. And then, when BM is created, we did it together. And then, 1996, we have MQA, developed by the government.

1:25:28 : First line, and then MQA. And then, the ballgame change. International recognition and mobility is required. We benchmarked ourselves to the accords and the agreements that is from the IEA. So, in 2000, EAC was established, and 2015, EATAC was established. So, our accreditation history is 1950s. And that is why our quality of engineering students, compared to our close neighbors, were very different. But, well, Singapore, you can consider, Singapore was with us at that time. So, they are parallel to us.

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1:26:11 : Except now, in the accords and agreements, we are better than Singapore. Well, we got our full six years, they only got two agreements. In our accords, we got full six years. Every time, they were lacking in a few things. I hope there's no Singaporeans here. Anyway, so this is how it has gone. Actually, the IEA started with standards of practice of engineering, IPE and EPEC. And then, they realized that, hey, to practice engineering, you must be taught right first. So, then they did the accords.

1:26:54 : Which was why IEM came first with IEA, and then the accords. So, international agreements govern the recognition of engineering education qualification, professional competence, and thus enforcing internationally benchmark standards. And because it is international, and those countries who are signatories, we can be recognizing those countries.

1:27:20 : Okay, so again, I will not go through that again. So, this is our history. Dr. Wira, you were in one of these, right? Was it here? So, this is how we got our IPEC, sorry, our accords, the Washington Accords, and then we got our Sydney. We are due in 2022 to be again, to be reviewed. So, IEM has been picked to be reviewed. And UITM, sorry, has been picked to be reviewed. And of course, in 2023, our Sydney and Dublin Accords will be reviewed as well. And I hope we get flying colors and we get six years for both. All right, I would like to actually highlight to you that the first EAC and the EAD director, sorry, he's not Dato' Haji Muhammad Mazlan, he's an alumni of ITM.

1:28:17 : He played an instrumental role. So, let's not forget him, yeah? So, he played an instrumental role in Malaysia's bid to be a signatory of the Washington Accords that facilitated the recognition of Malaysia. I mean, he's not only the first EAC council chairman and first EAD director, he's also an IEM president to number 23. But he's not only known here, he's also a philanthropist. He gave about three or four million to, right, very recently when he died, yeah. So, this is probably at that time you did it right, your teaching.

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1:28:52 : You produce an ITM graduate that loves the quality of engineering and no empathy for people. So, this is one of the products. And, of course, we are going through these OBEs. I'm not going to go through that. I know I'm running out of time. And when we benchmark with IEA, we move from prescriptive teaching into what is called outcome-based education.

1:29:20 : I'm going to peruse through this as well, yeah, the outcome-based, everybody knows. To summarize it, outcome-based education means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experience. That's all. You just, yeah, organize things. And, of course, EAC, ATAC, we can up the standards and we help you to benchmark yourself. These are all the manuals.

1:29:59 : So, different requirements. I think you all know about this. Again, I'm not going to spend time. Engineers, you are more theoretically, and technologists are more practically oriented. The mapping of the registered person, and, of course, the pathway again, and the routes and careers to engineering, yeah. And we get to the part that I would really want to talk to you about. The professional engineer and the engineering educators. You can interrupt me anytime if you think what I say is wrong, or if you think that I would love to have some contribution from you, yeah. Okay, so because of the way people are working, engineers are working, we need to be taught differently, yeah.

1:30:47 : So we went to OBE, and here's the training of engineers. So we follow what UNESCO has wanted, yeah. You graduate, you train, and you become a professional engineer, all right? So stage one until stage three. So in Malaysia, this is how we do it, and this is the route that you do with IEM. You graduate with accredited degree. You must register.Then after registration, I urge you to join IEM because over here, you will be mentored. You will learn how people do things. You will have the opportunity to be part of projects and position papers and so forth.

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1:31:33 : And of course, those who practice, you practice as an engineer. After three years of registering, because if you don't register, it starts from the day that you register. You're three years from now. Yeah, you can do the PI, or you do it with VM. You need the PAE, and you upgrade to become members, and therefore then you can apply to become APEC engineer, ASEAN engineer, if you fulfill what was required, the seven years and so forth. You gain more experience, and you take an examination that is called the PCE, and you are upgraded to become a PEPC.

1:32:13 : Now, this PEPC, yeah, actually for those who are in the main engineering because they are submitters. Yeah, so as you can see, during the examination, they are tested for regulation and rules, statutory laws, design. For example, electrical. Yeah, I have standards to know, and I have to submit my plans. Civil, you have to submit your plans to DBKL and so forth. These PEPC are mostly for submitting engineers. Biomedical engineers, not really. Yeah? Unless I'm wrong. Any biomedical engineers here who could help me with that? You don't have any submitting authorities, yeah? All right, and this is how you need to do or to train yourself to become a PEPC.

1:32:58 : Of course, we do need submitting engineers, so common paper here are ethics, and then for civil, mechanical, electrical, your bylaws, your regulation, and so forth. You pass this, and you get a PEPC. All right, and then, of course, this is how you become it again.

1:33:15 : And now is a question that I'm asking you. The training of an engineering educator, are you a lecturer, an educator, and that the term engineering only describes what you are teaching? You can be an educator, but you're teaching mathematics, but instead of mathematics, you're teaching an engineering subject. Or are you an engineer, and you are at this university, you happen to be teaching? Now, if you are in the medical profession, it's a very clear cut.

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1:33:50 : You have to be a houseman. You still have to practice as a doctor, and then you teach. But us, no. In the olden days, yeah, you need to be an apprentice before you become an engineer. And as an apprentice, you learn from those who practice. Now, if you come in over here as a lecturer, but you don't practice, your training to become an ideal lecturer should be different.

1:34:21 : If you come in as an engineer, and you want to teach, there's a lot of training that you need to do. It's not easy to know how to do assessment. It's not easy to interact with students. And of course, other duties in the academy, you need to learn that, okay? So, please, you are engineering educators. You have dual professional identity. You are a lecturer, yeah, and you are an engineer.

1:34:50 : So, you need to develop competencies in both. You can be a great engineer. I mean, I used to have students, and I call professionals from outside, and they say, Oh, boring. They don't know how to teach. I don't know what they're saying. They couldn't attract the students. They just blabber on. Not you, those rainy. I know that you come to my classes.

1:35:10 : They like your teaching. So, yeah, you can be, but, so let's see how you become an ideal lecturer. Okay? So, to train an educator, it's important to understand the knowledge, skills, and values they have to develop in their student, and also to execute additional duties in the university.

1:35:34 : Now, you want your student to feel empathy, you want your student to know about SDGs. You, yourself, better know it. You want them to be innovative. You want them to be interactive. You, yourself, better know that. You, yourself, must be able to network as well. So, these are the IAGAPCs, the attributes, and these are the things you need to teach the students. You have ethics, and about disaster, about welfare. So, there must be a management and strategy to enhance an engineer's competence to meet the requirements of engineering education in this era.

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Jangka masa: 1 Jam 51 Minit 45 Saat

Transkrip:

1:36:12 : It is not like you come in and you teach. No. So, look at all the things you have to teach. Yeah, you need to get the students to feel empathy, integrity, you know, stewardship, leadership. But if you're not a leader, then how? I mean, you need to teach them to be the best of the best. But if you don't teach as though you're teaching the best, then that's difficult.

1:36:44 : So, lecturers in this modern era, in addition to teaching, are also expected to look at all the jobs we have to do. Research, engagement, and consensus. Manage courses and programs, departments, and faculties.

1:37:31 : So, here we are, I'm an engineering lecturer, and I work here. We have to do all of this compulsory. Teaching and research and publication, program and curriculum development. You must learn how to do that. Faculty and university duties. Interaction with students, you must do that as well.

1:37:50 : Lifelong learning. And then, I am also an engineer. I must do this.

1:37:56 : I must work with people outside. I must know about engineering education. Consultancy, I must do consultancy. I need to be updated so that, you know, I'm more into engineering, but I must teach. I need that in true education. To be a better lecturer, to improve my self-teaching, to look at the new tools to be able to teach.

1:38:18 : I mean, do I go to the lab, or do I use the new tools or simulation packages? Which one do the students learn better? Sometimes there are some that is overlapping. Of course, this is, yes, active in university CSR programs. You want to teach your students to be, you know, to care for people, to improve the community around you.

1:38:39 : Active in professional bodies and government agencies. And, of course, if you're an engineer, you need to do that. CPDs. So, I, oh, doesn't look very good over here. I just want to use two examples that I have that I work together. As I told you that I'm very lucky to be working in system. I have this, well, he's no longer that young now, Dr. Fazli. I don't know whether he's here or not. He works closely with students.

Program

Professorial Lecture Prof Ir Dr Norlida Buniyamin

Kolej Pengajian Kejuruteraan
Tarikh: 23 Ogos 2022

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1:39:07 : He brings in students during school holidays. He does robotic competitions. He interacts with them, yeah. And when the COVID hit, he was the first to react, did face masks, did this robot that goes around sanitizing people, and brought his students along with him. So, that is some ways of creating the GAPC attributes of the IEA, the students, and doing some of those duties. And then there's, of course, Prof. Zuhaina, very active in the outside body.

1:39:38 : And, because of that, she can promote your ITM educational programs. She does a lot of education with me. I think this is one of our, I see Prof. Zuhaina, and Tan Sri Chua, one of the presidents of IEA. So, these are the other duties. So, look at your dual personality that you have to do. Okay, so, however, this is important.

1:40:03 : Competencies of an engineering lecturer develop and change over time. You're not going to do engineering policies when you're a three-year-old lecturer. So, some lecturers are technical specialists, also do not want to do other things, yeah. And then, not every engineering lecturer can be competent in all areas, especially within this period of time. So, some are technical specialists, and, of course, others are better. They can actually integrate knowledge.

1:40:30 : They are better at networking, and they operate across boundaries in complex environments. They develop new programs, policy-making, and so forth. So, let us look. At the start of your career, mostly you're here. You're a brand-new PhD graduate. You're gung-ho to go through your technical things, yeah.

1:40:48 : Then you get involved. So, as you reach more of your careers, you get more into administrative duties, and you become policy makers. And then, of course, in all the time, you must be an engineer.

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1:41:02 : Remember doctors? They do all these things, but they still go to the surgery. They still do their clinical hours. Doctors still maintain their professionalism while teaching. So, sometimes, why don't we? It's a question. This is something that I want to discuss with you. So, this was a survey done by Matt Mohan in 2018 of many, many students in engineering colleges, and they asked, what makes a great engineering educator? So, these are the three things.

1:41:41 : They want an effective teacher. They want someone that demonstrates strong skills as an engineer, and is a good role model. And that person must be competent in their own discipline, for example, in engineering.

1:42:11 : Now, the next slide will show you some notes that the student wrote. So, have a look at it. These are notes that the student wrote. Knowledge and experience in the field engages in professional development. They are what we students want to become. We want to be engineers, and they are the only examples we have as engineers.

1:42:35 : So, don't be a lecturer without being an example. You first must be. Imagine if doctors were teaching new doctors who are not a doctor. That never happened, isn't it? But in engineering, this is it. Okay, so this is the argument. Think about it.

1:43:33 : But this is more important. Your own initiative. If you have no previous experience working as an engineer and becoming an educator in an engineering faculty, strive to obtain practical experience in the practice of engineering to obtain professional engineering status and eventually become a professional. It is you. And the thing is, UITM facilitates all this. You have associations to help you in all this, so there is actually no excuse.

1:44:08 : Alright, so this is what it makes. You must have all of this and all of this. And with that, thank you very much. Okay. Can you stay on the stage? Okay, please stay on the stage. Waiting for questions, am I? Okay. Thank you. Are you taking questions from the members? Yes. I think a few wanted to ask me.

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1:44:34 : I'm open. Okay, now we can take... Any questions from the audience? Yes, Dr. Mangat. Oh, yes, please.

1:44:44 : Ada, Ada. Thank you, Prof. Nolita. Thank you for the great session today.

1:45:01 : My question would be, one of the slides you mentioned about entering profession, engineering profession. Yes. Educators need to prepare students to enter the profession, but the current era is totally different from... I can't hear you so well.

1:45:17 : The era, especially IR 4.0, where digitalization is all about, that when graduates entering profession, it's no longer that they become an employee. They could also become an employer. Employer. Yes, of course. And so on. And two days ago, PM was saying that we need to become a producer of technology rather than a user of technology. Exactly. Then IR 4.0, digitalization, producer of technology is all, mostly comes from startups rather than from the bigger organization. Yes.

1:45:51 : My opinion, I believe that we should produce graduates who could become, immediately become an employer, job creators, as well as producing technologies rather than preparing themselves just to become an employee in the beginning of their career. So I think education, engineering education should look into that even more rather than just preparing themselves and employing. That's my opinion. Maybe you have an opinion.

1:46:19 : Thank you, Dr. Mogah. I mean, exactly.

1:46:22 : And I think UITM itself has taken the initiative. We have startups. We have given them space to start up. It's just the lecturers. Do you want to do it or do you not want to do it? In our section, electrical, I think Dr. Fazli, as I said, I always use him. He has about four companies working in there. And our companies, our students are working to produce things with him. And hopefully it gets better and better. But the facilities are given.

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1:46:49 : How you teach, you already know. It's whether you want to teach in that way. Do you want to be the best lecturer? Do you want to be the ideal lecturer or not? You're quite right.

1:47:01 : Is that it? It's raining. I thought you wanted to ask me a question. Come on.

1:47:05 : Yes, please. Yes, we always have a lot of arguments, she and I. And we work on certain projects together.

1:47:17 : Hi, Prof. In reference to what Dr. Magat said just now, I'm just wondering, with the changing in the world platform now, things are changing.

1:47:32 : Can you be a bit louder? Everything is now moving very fast. The cyber world is getting over everything. And when I was lecturing last time, I was telling the students, when you look for employment, do not go for the sunset industry. Exactly. The thing is that at that time when I was lecturing, I thought people like accountants or maybe lawyers, they might be replaced by computers one day. Little did I know that the engineering profession is also going towards that. That direction. Sunset. That direction.

1:48:12 : So I was wondering, if the university is ever going to revamp the syllabus of the students, of the engineering students, to accommodate these changes. I don't know how you're going to do it.

1:48:26 : Yes, of course we are. And that is where IEA comes in to be very important. So when you have a title of a program that you're doing, it's assessed whether the subjects in there leads the student to know what they have to be and what they have to become to be able to be competitive and to contribute in that area. Yes, of course.

1:48:46 : So your ITM has done changes to the syllabus? Yes, of course. We do review all the time. Professor Haimin will probably be able to take that more. And yes, we do. Okay, that's good. Thank you.

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1:48:57 : In fact, we are also embarking, as Professor Haimin says, in engineering education programs where we are going to look for lecturers from the polytechnics and for institutions that teach engineering to ensure that they teach correctly to produce the best graduates, all effective engineers. Okay? Thank you very much. Okay, I think that's wrapped up.

1:49:24 : But please stay on the stage. Thank you very much, Prof Norlida, for the excellent lecture and knowledge sharing. Let's give a big hand.

1:50:03 : You got two, Prof? One from the university, the other one from the system.

1:50:09 : Yeah, this one flowers. From system. Thank you very much, Prof Suhaimi and Prof Norlida.

1:50:32 : Distinguished guests, ladies and gentlemen, the professorial lecture session has come to an end. All good things must end. Thank you for your presence and kind attention.

1:50:47 : The organiser appreciates the sound support from the public and private sectors, and we apologise for any shortcomings. Lastly, we would like to invite everyone for a photo session, starting with the VIPs. Following that, an autograph session by Prof Norlida will be held outside of this hall.

1:51:13 : Thank you very much. Semoga berjumpa lagi. See you.

1:51:18 : warahmatullahi wabarakatuh. We can have photo session.