



ATTRIBUTES OF FUTURE ENGINEERS

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Panelist:

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Ir. Azizi bin A Hadi



The best way
to predict the
future is to
invent it

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Forum 1: What Is the Future For Engineering Career

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ENGINEERING
THE FUTURE



Prof. Ir. Dr. Norlida
Buniyamin

BEM CONVENTION 2022
25-28/10/2022
TM Convention Centre, KL

What is the Future for the Engineering Career?

The Future is very bright.

We are moving from inventions

To

Systems



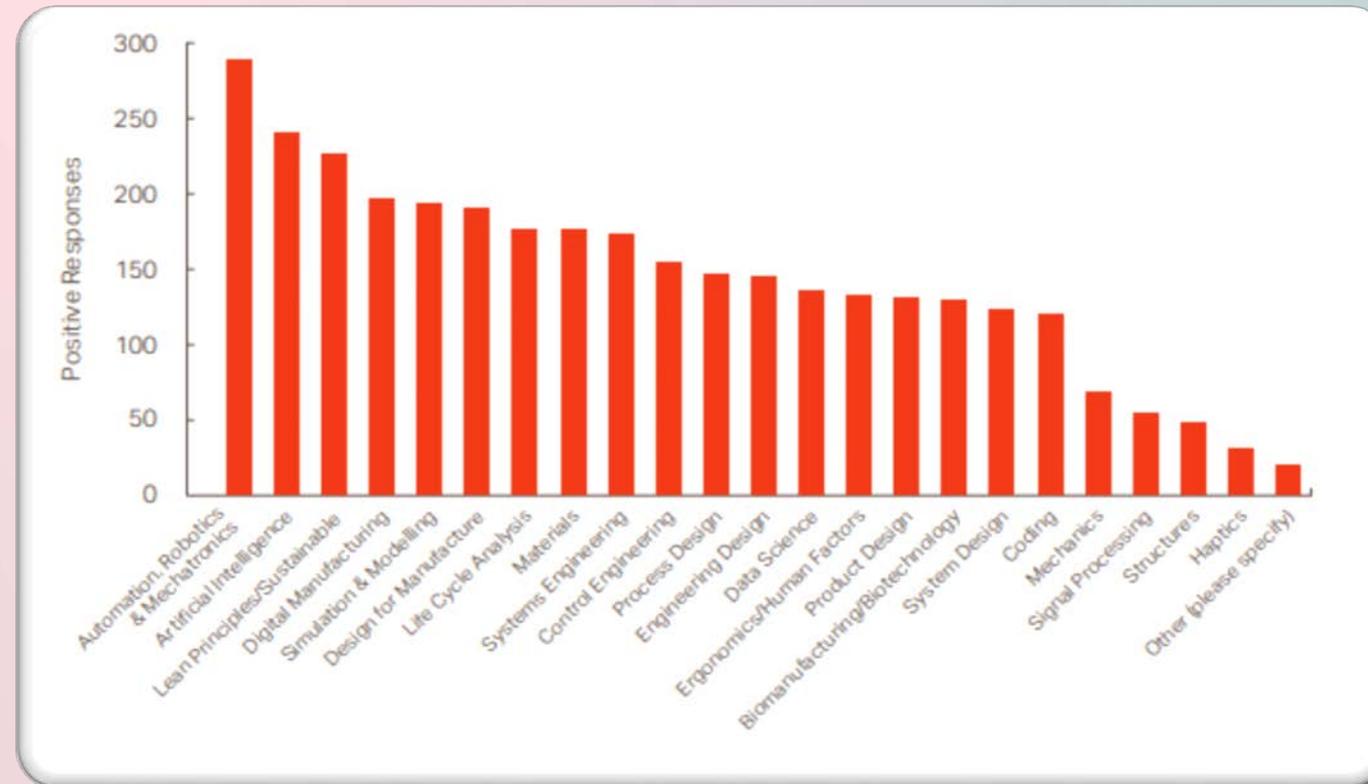
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The Emerging Engineering Technologies In Manufacturing



What is to us as engineers? What acquire skills does one needs?

- Automation, robotics and mechatronics
- Artificial Intelligence
- Lean Principles/ Sustainable manufacturing
- Soft skills:
 - Communication skills
 - Creativity
 - Design thinking



By: Ir Bernard Lim, Vice President/ Managing Director of Appscard Group AS

The Emerging Engineering Technologies In Construction



- Digital Twins
- Building Information Modelling (BIM)
- Augmented Reality & Virtualisation
- 3D Scanning and Photogrammetry
- Digital document & site management
- Big Data & Predictive Analysis
- Cloud and Real-time Collaboration

- Drones
- 3D Printing
- Blockchain
- Wireless monitoring
- Pre-fabrication and modular construction
- Advanced Project Management
- Autonomous construction

By: Ir Prem Kumar, Member of WG on Cluster Emerging Technologies

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Outline of Presentation

Technology: Industry 4.0

Sustainable Development

Interconnected World



Prof. Dr. Khairiyah Mohd
Yusof

Skills required in 4IR

Soft Skills

Hard Skills

Creative Thinking

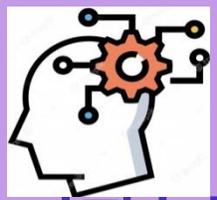


Persuasion

Collaboration



Time Management



Critical Thinking

Focus on emotional quotient



Adaptability



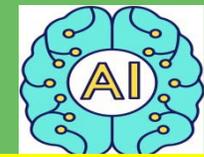
Social media skills



Cloud Computing

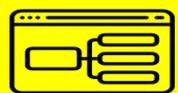


Blockchain



Artificial Intelligence

UX Design



Mobile Application Development



Video Production



Data Science



Social Media Marketing

Animation



Digital Marketing





INTERNATIONAL ENGINEERING ALLIANCE (IEA)

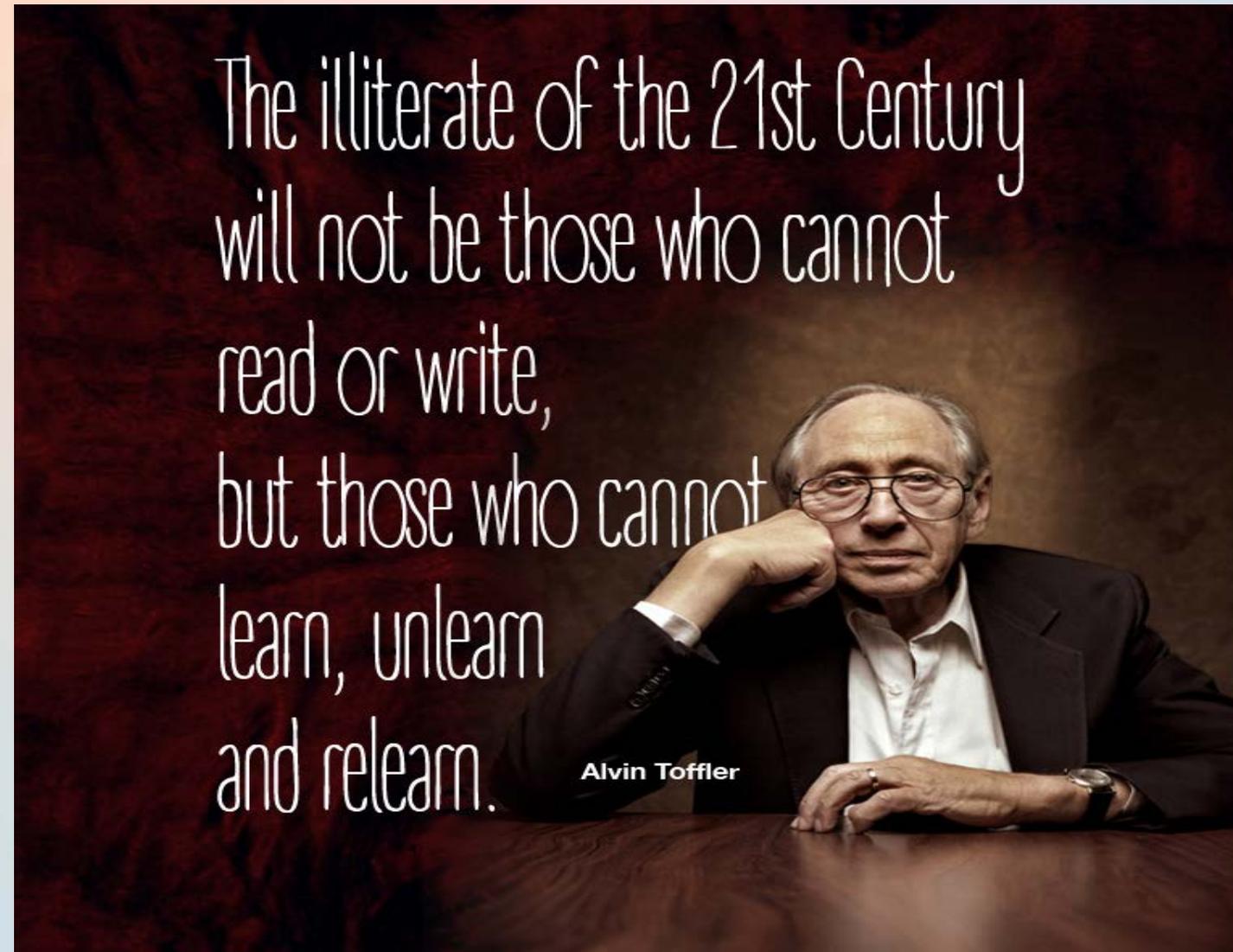
GRADUATE ATTRIBUTES	PROFESSIONAL COMPETENCY
Engineering Knowledge	Comprehend and apply universal knowledge
Problem Analysis – complexity of analysis	Comprehend and apply local knowledge
Design/development of solutions – solutions not previously identified or codified	Problem analysis
Investigation – breadth and depth of investigation & experimentation	Design and development of solutions
Tool Usage – understanding of the appropriateness of technologies & tools	Evaluation
The Engineer and the World – responsibility for sustainable development	Protection of society
Ethics – understanding and level of practice	Legal, regulatory and cultural
Individual and Collaborative Team Work – Role in and diversity of team	Ethics
Communication	Manage engineering activities
Project Management and Finance	Communication and Collaboration
Lifelong learning	CPD and Lifelong learning
	Judgement
	Responsibility for decisions



ENGINEERS' ROLE IN NATION BUILDING

- DESIGN & INNOVATION
- COSTING & BUDGETING
- PLANNING & MONITORING
- SUPERVISION & QUALITY CONTROL
- CONTRACTS ADMINISTRATION
- BUILD & CONSTRUCT
- MAINTENANCE & REPAIR

- FRAMEWORK & POLICY
- MANAGEMENT





THANK YOU



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BOARD OF ENGINEERS MALAYSIA

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