VOLUME 1, 3RD ISSUE | MARCH 2021

FACULTY OF ENGINEERING & BUILT ENVIRONMENT

The Dean's Message

This version of our newsletter from Faculty of Engineering and Built Environment (FOEBE) is released while the COVID-19 pandemic situation is affecting the lifestyle and activities all around the world as well as our teaching and learning conditions. However, as one of the members of MAHSA University and FOEBE, I am pleased to state even though the pandemic is still around us, we have managed to successfully continue conducting online academic activities successfully with the highest possible. As an indication for this statement, it is grateful for me to announce that two of our Engineering's students was among the best of all graduates from MAHSA University and they proudly achieved the "Best Students Chancellery Awards".

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Jalan SP2, Bandar Saujana Putra, 42610 Jenjarom, Selangor, Malaysia.

The Faculty of Engineering and Built Environment even is moving forward on new initiatives in line with IR 4.0 and Green Technology requirements. As such, I can mention the first ever fully online competition Engineering, Science and Technology Exhibition (ESTE) with the presents of representatives from more than 10 universities locally and internationally, conducting more than 20 webinars by inviting international speakers offering online masterclass and industry related workshops.

Additionally, in line with IR4.0 and Green Tech necessities to fill up the gaps between academic and industry particularly by looking into current industry requirements and needs, FOEBE initiates 3D printer laboratory and developed Additive Manufacturing workshop accordingly.

Furthermore, as our mission to emphasis on close relationship with industry and to reveal our student to real case scenarios, we are pleased that MAHSA Hospital construction's project has been started and FOEBE collaborate with this project on many aspects such as involve students for their internship period.

Finally, once more I would like to emphasis on activities we have initiated based on our understanding on this COVID-19 pandemic situation, therefore we hope all students understand and acknowledge these activities and will be working harder for a brighter future. I wish you all wonderful, healthy, and safe condition and look forward to seeing you on campus as soon as possible.

DR. IMAN FARSHCHI,

Dean, Faculty of Engineering & Built Environment

Editorial Board *'INGENIOUS'*

Mr. Kasipandian Kasirajan,

Senior Lecturer

Ms. Irna Nursyafina,

Lecturer

Mr. Mohd Fairuz,

Head of School

Ms. Syazana Syahirah,

Programme Coordinator

Faculty Achievements

CONGRATULATIONS to the lecturers in FOEBE, Ts Nurazliza binti Ahmad, Ts Dr. Nur Atiqah binti Ramlan and Ts Dr. Hoh Wei Siang for awarded as Professional Technologists under Malaysia Board of Technologist (MBOT).

MBOT is a professional body that gives Professional Recognition to Technologists and Technicians in related technology and technical fields. Its function looks at technology-based profession that cuts across discipline based on conceptual design to a realized technology. As a whole, these professionals have integrated roles from concept to reality.

Ts Dr. Hoh Wei Siang

Lecturer

Ts Dr. Nur Atiqah binti Ramlan

Faculty Manager

Ts Nurazliza binti Ahmad

Deputy Dean

CONGRATULATIONS to our students who were among the bests in MAHSA University for achieving Chancellor's and Vice Chancellor's Gold Awards this year.

MOVING FORWARD TO IR 4.0

Additive Manufacturing (AMT' 21)

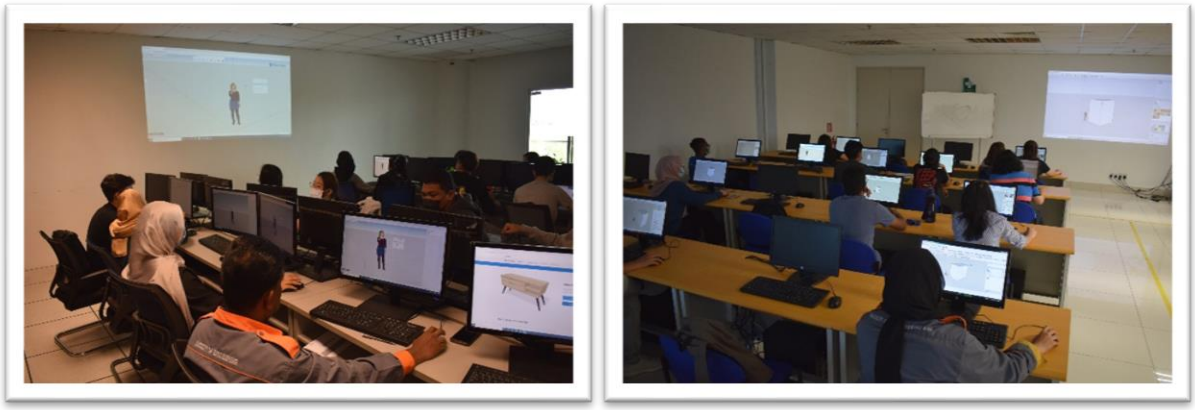
In 2020, the COVID-19 pandemic had repercussions on nearly all sectors of activity. The additive manufacturing technologies were quickly employed to manufacture emergency equipment for medical staff and patients from all over the world. 3D printing from additive manufacturing become an "essential ingredient" in Industry 4.0. Therefore, there are high demand in current market for those who have the knowledge and technical skills of additive manufacturing.

In order to fill the gap in the market and cultivate talents in the field of additive manufacturing sector, the Faculty of Engineering and Built Environment (FOEBE) launch the Additive Manufacturing Training in April 2021. The objective of Additive Manufacturing Training (AMT'21) is to provide participant knowledge and skills which related to the latest trend and technologies of Industrial Revolutions 4.0 (IR4.0). The participant able to gain the latest knowledge from industries sector as well as master new technical skills, get new jobs and create jobs.

Opening Ceremony for Additive Manufacturing Training (AMT'21)

The AMT'21 held for 6 days and includes full coverage of the additive manufacturing theory, 3D Modeling using Google SketchUp and 3D Printing, including sketching extruding 3D objects, and 3D Printing based on design model. In addition to the focus on 3D Modeling and 3D Printing services, training also includes sections on theoretical knowledge of concept and methodology in Additive Manufacturing, design rules and rapid tooling are demonstrated with details explanation.

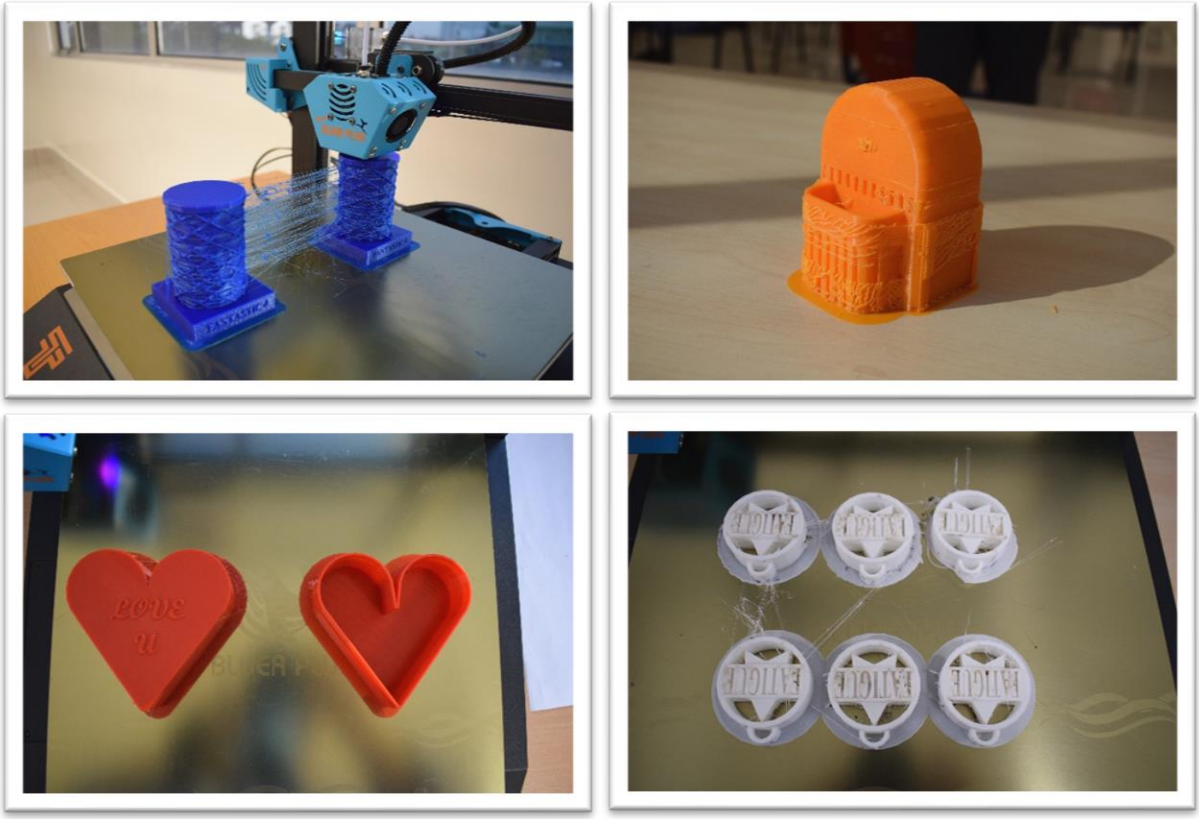
Sketching extruding 3D Objects



3D Modeling using Google SketchUp Software

At the end of the AMT'21, the participant generates their own design 3D product files from Google SketchUp software. Then, participant need to setup the 3D Printer machine like adjust temperature of nozzle and print bed, install filament and adjust the adjustment of bed levelling. Total of eight (8) Fused Deposition Modelling (FDM) 3D printers, two (2) Stereolithography (SLA) 3D printers and one (1) Flash Forged 3D Printer were operated.

3D Printer Introduction and Practise Session



AMT'21 Participant 3D Products

In the end of AMT'21, lots of positive feedback from the participant obtained where they emphasized that this training was impressive and practicality.

Sincere thanks to all committee members of AMT' 21

AMT'21 INSTRUCTORS

AMT'21 COORDINATORS

Dr. Iman Farshchi

Ts. Dr. Hoh Wei Siang

ADDITIVE MANUFACTURING (Theory Class)

Ms Siti Afifa Binti Anuar

Dr. Ho Shuh Huey

3D DESIGN & MODELING (Theory + Practical Class)

Sr. Mukram Bin Idris

Ar. Sharonee Bin Sidek

3D PRINTING TECHNOLOGY (Practical Class)

Mr. Sheih Muhammad Buhari

Mr. Mohd Noor Hariz

AMT'21 FACILITATORS

Ts. Nur Azliza

Ts. Dr. Nur Atiqah

Dr. Nurul Izzatul Akma

Dr. Nur Nabila

Mr. Mohamad Syazwan

Ms. Nur Arzilawati

Mr. Mohamad Fairuz

Dr. Mohammed Dhia

Mr. Muhammad Razmi

Ms. Nur Rashidah

Ms. Noor Farahain

Mr. Siva

Mr. Muhammad Ammar

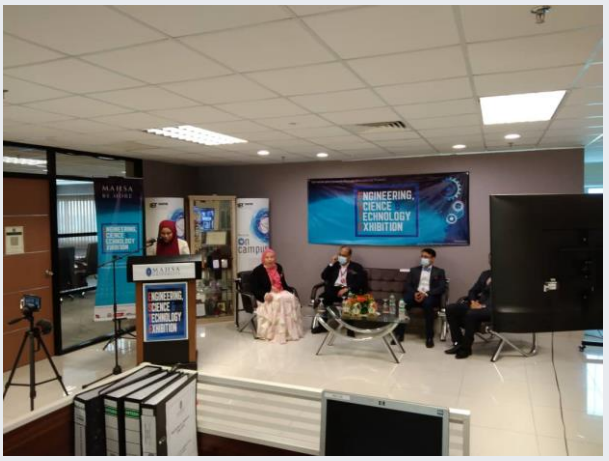
Dr. Shin To

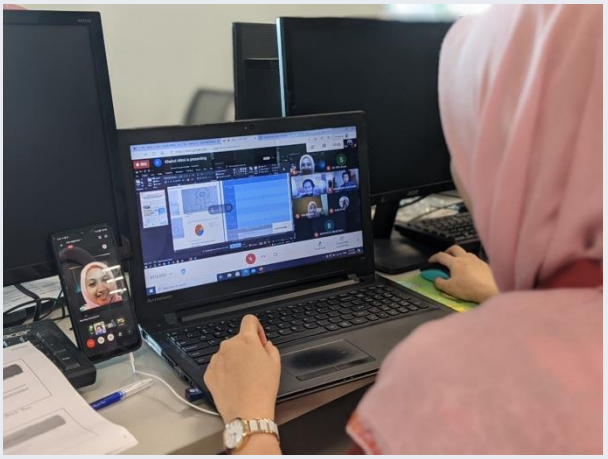
FACULTY EVENTS

ESTE' 21

On 15 March 2021, MAHSA University's Faculty of Engineering and Built Environment organized an Engineering, Science and Technology Exhibition (ESTE) for the fifth time and the first time had been conducted via online platform. This exhibition was open to all students of MAHSA University as well as other universities. The Engineering Science and Technology Exhibition is a platform that gives students an opportunity to experience, innovate, and come up with unique scientific ideas. Inaugurated over four years ago, the exhibition now receives over 400 entries from different universities. The exhibition is evaluated by expert judges from various universities in their related fields. The judging criteria is based on the innovative poster and creative prototype presentations by the students. The event was held via Google Meet platform with the participation by six universities including one international university, Universitas Malang from Indonesia.

The aim of this exhibition is to nourish students' research, design and innovation skills in multidisciplinary areas that are related to engineering, science and technology towards IR 4.0. Our mission is to support and encourage the students to share their knowledge, research work and experience during the exhibition, which will ultimately contribute to the development in engineering, science and technology.





A total of sixty eight (68) participants from numerous fields competed in the competition. During the closing ceremony, the faculty was honored with the presence of Vice Chancellor, MAHSA University, Professor Dato' Dr. Ikram Shah Bin Ismail. He was very keen in motivating the students by sharing his experience in the research field among MAHSA's students and staff. This exhibition is a mind-changing platform to develop research-based knowledge, stimulating the students' creative and innovative ideas, interpersonal and problem-solving skills, etc. The feedback from the Judging panels also boosted the students' minds.

FACULTY EVENTS

SIGNATURE PROJECT: MAHSA SPECIALIST HOSPITAL

A ground-breaking ceremony was held in December attended by the Dean and lecturers of Faculty of Engineering and Built Environment to officiate the construction of MAHSA Specialist Hospital. This project is due to complete in 26 months and will serve as a platform for medical service to the public, as well as creating opportunities for career employment and internship for MAHSA students and graduates.

Collaboration happens when a cluster of people come together and contribute their expertise for the benefit of a shared objective. Collaboration in the workplace is what makes teamwork successful and can increase the skill of both parties.

Therefore, the collaboration between FOEBE and Mahsa Hospital project can bring many benefits to the students, staff and industries linkage. This will ensure the learning process will link to the industries and followed the current technologies, ensuring the student placement for industries training and also giving continuous learning to the current staff about the site experience.

For example, a mixed-skills team might include an engineering consultant, a developer, and the contractors in this Mahsa Hospital Project. It's essentially a team set up to collaborate for a period on a shared project. In doing so, it brought together members from some different teams, created a common purpose between them, and set up connections which will serve in the future. These are generally the teams that tackle projects which require people with diverse skill sets and areas of expertise

In short, collaboration to break down some walls in organization, and tighten up connections between companies.

For the collaborations between FOEBE and Mahsa Hospital Project, some meeting already been set up to set the connections between us. The visits happen a few times for some discussion on the collaboration and the student's activities on the site. The visit to the site by the Faculty Dean, Dr Iman Farshchi, together with the faculty members, Dr Shito Amiri, Sr Mukram Idris and Mr Mohamad Fairuz. Mahsa Hospital Project Team also have visited the FOEBE Laboratory facilities to check on the other collaboration that can be done by both parties.

This collaboration also focuses on the industrial training for FOEBE students. Starting on May 2021 three student from Diploma in Civil Engineering already starting they industrial training placement with Mahsa Hospital Project. This partnership really benefits the students of our faculty and also the faculty have plan to have regular site visit to this project to ensure our students will be expose as many site experience as possible and get as much knowledge as possible from this collaboration.

One of the greatest things about working collaboratively with people who bring different skill sets and backgrounds is learning from their experience. Collaborating with others or even different teams should be thought of as a learning experience, and this will make our informal way of learning and gain experience.

Furthermore, inquiring for feedback and opinions, to sharing knowledge, discovery out how collaborators approach their side of the project, and gaining a better sense of how they work.

Teams that collaborate not only have an opportunity to learn from each other, their mistakes, successes, failures, workflow, etc is very valuable for the newcomers like our students. they'll also gain an understanding of the other team's perspective. They get a chance to hear their side of things: their pain points, priorities, even the way they think. Which can be extremely valuable as the students work together going forward.

But for many types of projects, collaboration is just more efficient. When the project is complex and demanding, we have to be able to admit to ourselves that we'll need help. It'll have to be a group effort. And that's where collaboration comes in. It helps us divide up a heavy workload, find creative solutions to tough problems, and wrap our heads around the big picture.

For the conclusion, this collaboration ensuring the win-win situations for both parties and will benefit a lot to Mahsa students and staff. From this collaboration we will really teach the students by site visit, internship placement and research activities and verse versa the Hospital project will get the expertise from the faculty members.

JANUARY

The construction industry nowadays is rapidly developing in Malaysia. More skilled roles are becoming available especially Quantity Surveyor. Quantity Surveyors are mostly responsible for the cost of building project set from initial estimates to the final account of materials which mainly focused on providing clients value for money following to the contract produced adhering to strict regulations from every aspect of the construction industry.

In this webinar, Ms Rashidah had an afternoon coffee with an alumni, Ms. Siti Nur Hidayah graduated in Diploma in Civil Engineering here in MAHSA University. Ms. Siti Nur Hidayah shared her experiences on the CIDB courses for Civil Engineering graduates as she completed her 6 months short CIDB course at ABM in the norther region.

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In this webinar mainly will be discussed on how the engineers, architects and quantity surveyors can solve problems to improve our surrounding word. It will be given the unique skills of engineers and architects that they are acting like a poet by morning, they humanist by noon and by the afternoon they are the builder. Characteristics of engineers will be highlighted, as which they are advanced in solving problems, creative, passionate to help people and make their lives better and finally engineers will turn ideas into reality. Basically problems are engineer's inspiration. It has been discussed also about graduate's attributes, for complex problem solving skills, which required to analysis of problems and responsibilities to society as well as complex engineering activities, which is included the ethics required in workplace. Afterwards, as an evidence on grate mind of engineers and their ability to solve problems, various unique engineering's projects will be discussed.

FEBRUARY

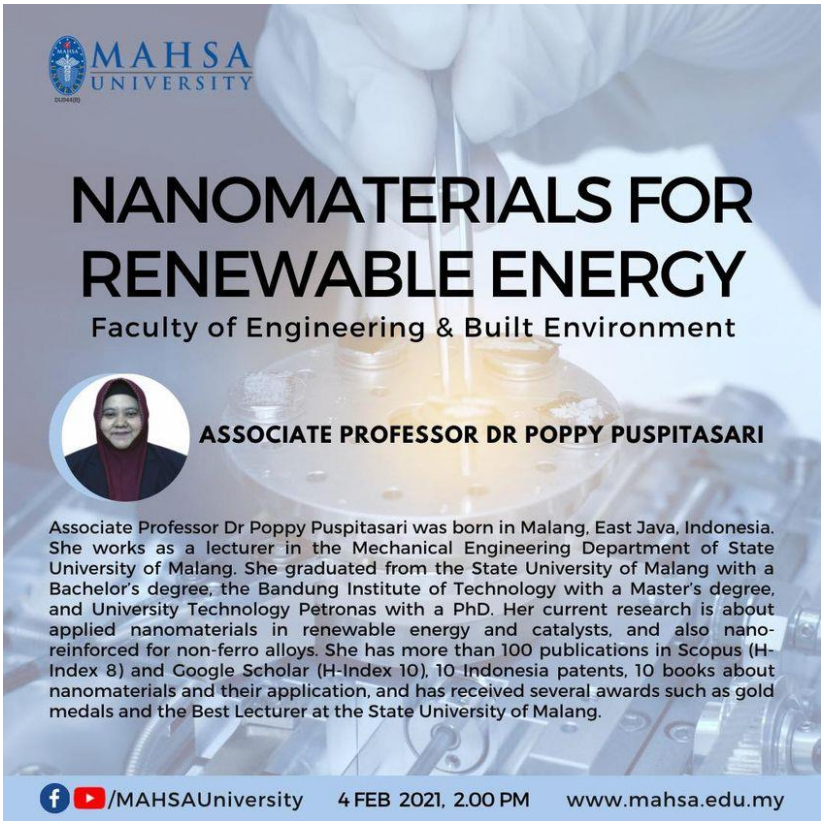
Industrial Revolution 4.0 (IR4.0) is the current trend and buzzword which have been repetitively mentioned by the Government, Industry Leaders, Corporates as well as Small and Medium Industries (SME).

Therefore the webinar is designed to give an overview on IR4.0 and how should the upcoming graduates mold themselves to prepare for the industry needs.

The need of energy is a major concern in the world because it plays a major role in driving human activities, industrial activities.

Our fossil fuels dependence causes serious problems in the environment, such as environmental damage, global warming an air pollution.

Several alternative solutions have been developed in several recent studies, including the use of nanomaterials in the renewable energy sector.



MARCH

Project planning is crucial stage in construction where it allowed us to plan and schedule what we need to do and complete for our task as constructor.

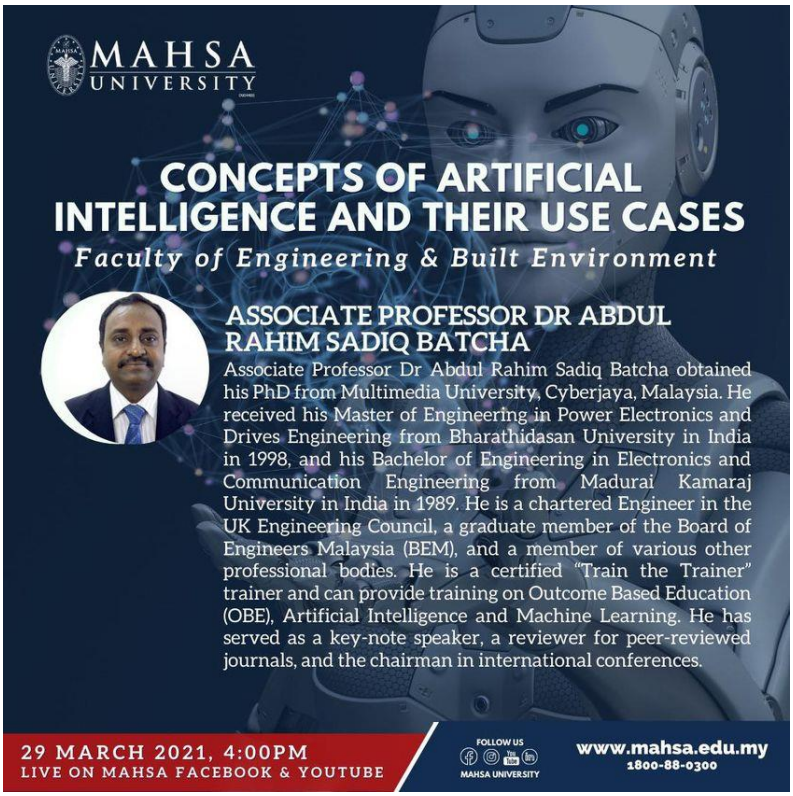
Engineers will ahead be planned on what is the activities and works should be done to complete any construction. The failure to plan will make the construction fail.

Therefore, the planning stage is very important to ensure of the successful of the project.

Computer-aided engineering (CAE) involves creating compute models defined by geometrical parameters and boundary conditions to put to test to different simulation environment. These defined models are then evaluated by series of engineering equations and techniques that can simulate real-life testing conditions.

Relevant parameters, initial conditions, meshing definition as well as advance settings can be manipulated easily by using toolbar that has all the control at the fingertips. Computer aided engineering is an important industry within the tech world. It involves utilizing computers to help with engineering and design for a wide range of projects. Common types of computer aided design include metal fabrication, carpentry and 3D printing, as well as others that have impacted modern manufacturing and other business processes.

An important part of a Quantity Surveyor's career is continued professional development of which there are some very specific steps which must be followed. Continuing professional development is vital in maintaining professional competencies and standards such as attending several programmes which involves a set number of hours of professional development and culminates in an assessment.



Artificial intelligence (AI) is likely to substantially change every industry and it will continue to act as a technological innovator for the foreseeable future. This webinar describes concepts of Artificial Intelligence such as machine learning and deep learning and its use cases.

These impending transformations might be best understood using illustrative use cases from diverse industries such as AI models in business, medical revolution, agriculture and robots in Industry 4.0.

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