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Press Release from IIITDM Kancheepuram, Govt of India

New program in Smart Manufacturing launched at IIITDM Kancheepuram to strengthen 'Make in India'

Indian Institute of Information Technology Design and Manufacturing, (IIITDM Kancheepuram), located at Chennai, is the first in the World to understand the demands of Industries which are finding difficult to meet the dynamic market demands and lauch a program that will groom future engineers. Industries are getting ready to face the 4th Industrial revolution, Industry 4.0 or Smart Manufacturing, where Internet of Things (IoT) is going to play dominant role.

IIITDM Kancheepuram launched the new B Tech program in the specialization, Smart Manufacturing, with an intake of 40 students from this academic year. Prof Gnanamoorthy, the Director, mentioned that the new 4 year UG program was evolved after a series of brainstorming sessions with experts from leading industries and academicians. The new program will have courses on Internet of Things, Big Data, Networks, Sensors and Controls, in addition to manufacturing processes and systems engineering. The new program was launched by the Director, Prof Gnanamoorthy and Dr. Sudarsan Rachuri, an international expert in Smart Manufacturing, from Advanced Manufacturing Office, US Department of Energy was the guest of honor for the program launch ceremony.

IIITDM Kancheepuram, the Institute of National Importance, established by Govt of India, in 2007, is the first in the country to introduce Design Centric Engineering Education under the leadership of Prof Gnanamoorthy. Prof Gnanamoorthy revamped the engineering curriculum with more experiential learning pedagogy and introduced Design Thinking vertical together with regular engineering courses.

Dr. Sudarsan briefed about the efforts of Obama administration to revive American manufacturing and compared the similar efforts of the Indian Government. Dr. Rachuri also shared the details of the recently announced Smart Manufacturing Innovation Institute and its objectives. Smart Manufacturing Innovation Institute will be a hub for innovation in manufacturing and draws more than 40 partners from academia and Industry. He also noted the efforts of Advanced Manufacturing Office, US Dept. of Energy in bridging the gap between industry and academics by accelerating the technology readiness level. He lauded the efforts of IIITDM to develop this one of its kind program and wished good luck for the first batch of students who joined the program.

About the new B Tech Smart Manufacturing Program:

The recent initiatives of Govt. of India, such as 'Make in India', 'Skill India', 'Digital India', Startup India and Stand up India, are expected to transform the manufacturing into a hotbed of new jobs and will lead to overall economic growth. Manufacturing is not only the backbone of the economy but also the muscle behind national security. Keeping this in view,

a few manufacturing sectors have been identified as strategic for strengthening the national capabilities from the long term point of view. With increasing and rapidly changing customer demand, less product life cycle and planning time, and highly competitive nature, the industries, all over the world, are forced to relook into their current organizational setup. The 21st century manufacturing facilities have piloted a new wave of manufacturing with an amalgamation of technologies from robotics, sensors, big data to fully integrated production systems. With smart manufacturing or Industry 4.0, or Internet of Things or Industrial Internet, manufacturers are moving towards a new level of interconnected and intelligent manufacturing system which incorporates the latest advances in manufacturing science, information science and data science and automation tools. This has enabled the plant to be constantly accessible, monitored, controlled, designed, and adapted for real-time adjustments. The greater digital interconnectedness between various parts of the supply and production chains, as well as the higher reliance on automation in these smart factories, is going to make manufacturing ultra-efficient, ultra-sophisticated, and ultra-productive.

To keep pace with the evolution of these “smart” factories requires highly skilled and agile engineers to manage the increasing complexity and shorter mind-to market product cycles. The sophistication of today’s factories places greater responsibility on new engineers to choose their skillset, to manage and operate in an advanced manufacturing facility. And with the skills gap becoming an increasingly worrying trend, manufacturers must act now in order to acquire the benefits that smart manufacturing, alongside a smart skillset, can provide. Smart manufacturing has the potential to trigger innovation and productivity, enable and spur growth, facilitate greater worker and product safety, and improve the environmental profile of operations of the manufacturing industries. There is no other point in time other than today where Smart Manufacturing is projected to produce fourth Industrial revolution and is expected to bring huge dividends to cost reduction and efficiency improvement in manufacturing. Today’s products and the factory producing the products are becoming smart and connected. However, the country is facing shortages in skilled engineers to serve this segment of industry. Rather than being grouped and siloed by disciplines, the cross-referential and collaborative nature of smart manufacturing calls for multidisciplinary, outcomes-based teams organized around optimizing tasks and processes. Finding appropriately skilled employees for these teams is becoming huge challenge for manufacturing companies.

The objectives of the program are to train workforce catering to needs of 21st century manufacturing industries which are increasing becoming smart and connected. The curriculum for the program has been carefully crafted by conducting many brainstorming sessions with Industry and Academic leaders in Manufacturing. The courses for the program are interdisciplinary in nature. Students will be trained in fundamental manufacturing processes, manufacturing systems, systems engineering, IoT, Data Analytics, Industrial Networks and basic shop floor communications in addition to basic science and engineering courses. Experiential learning approach will be followed and students will be gaining hands-on experience in many spheres of technology related to smart manufacturing. Students will also undergo internships for five months’ duration and will be exposed to real world

problems of the present day industry.