AUTOMATION IN PRODUCTION SYSTEMS AND MANAGEMENT

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Department of Industrial and Systems Engineering
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TYPE OF COURSE : New | Elective | UG/PG
COURSE DURATION : 12 Weeks (26-Jul' 21 - 15-Oct' 21)
EXAM DATE : 24 Oct 2021

INTENDED AUDIENCE : Students belonging to disciplines like Industrial Engineering and Management, Production Engineering, Manufacturing Science and Engineering, Mechanical Engineering and allied disciplines

INDUSTRIES APPLICABLE TO : Tata Steel, Tata Motors, L&T, Linde and similar such manufacturing organizations complying Industry 4.0 standards.

COURSE OUTLINE :
To introduce the fundamentals of automation in manufacturing systems with major emphasis on application of the state-of-the-art techniques and processes so as to achieve the best possible planning and control in a manufacturing and production environment. The knowledge in the topics as mentioned in the course outline is essential to achieve this objective. The course is intended to be designed for creating a knowledge-base of the state-of-the-art manufacturing systems particularly in designing and developing automated systems and sub-systems.

ABOUT INSTRUCTOR :
Pradip Kumar Ray is presently a Professor in the Department of Industrial and Systems Engineering, Indian Institute of Technology (IIT), Kharagpur, India. He served as the Head of the Department during September, 2006 to August, 2009. A mechanical engineering graduate (IIEST, Shibpur) with MTech degree and PhD in industrial engineering (IIT Kharagpur), Professor Ray has about more than thirty-six years of diversified experience - eight years in industry and more than twenty-eight years of teaching and research experience at IIT Kharagpur.

COURSE PLAN :
Week 1: Introduction to Manufacturing and Production Systems
Week 2: Automation in Manufacturing and Production Systems
Week 3: Product Development Process and Automation
Week 4: Fundamentals of NC Technology: Part-I
Week 5: Fundamentals of NC Technology: Part-II
Week 6: Flexible and Programmable Automation
Week 7: Cellular Manufacturing Systems
Week 8: Flexible Manufacturing Systems: Part-I
Week 9: Flexible Manufacturing Systems: Part-II
Week 10: Fundamentals of Robotic Systems
Week 11: Automated CAPP (Part-I)
Week 12: Automated CAPP (Part-II)