

DEPARTMENT OF MECHANICAL ENGINEERING

ACADEMIC YEAR 2023-24 / ODD SEMESTER

Report on Refresher Course – Automation in Manufacturing

The Department of Mechanical Engineering at Kings College of Engineering organized a refresher course on “Automation in Manufacturing” for IV-year students. The course aimed to equip students with the latest knowledge and skills in the field of automation, preparing them for the challenges of modern manufacturing industries. The refresher course spanned a period of nearly four months, commencing on July 27, 2023, and concluding on November 11, 2023. The course consisted of a total of 30 hours of instruction, with an added focus on assessment through two internal exams, each of which was 3 hours in duration and carried a maximum of 100 marks. For all passed students, the E- certificate has been issued through the mail.

COURSE DETAILS

Course code &Name	: Automation in Manufacturing
Year / Semester	: IV Year/Mechanical – A & B
Course duration	: 27.07.2023 to 11.11.2023 (30 Periods)
No of students enrolled	: IV MECH A – 39; IV MECH B – 40 (Total-79)
No of students completed the course	: 79
Course Instructor	: Mr. H. Agilan & Mr. S. Sabanayagam

Course Content

The course provided a comprehensive understanding of automation in manufacturing, covering topics such as:

- Introduction to Automation
- Types of Automation
- Sensors and Actuators

- PLC Programming
- Industrial Robots
- CNC Machines
- Process Control
- Industry 4.0 and Smart Manufacturing

Course Objectives

- To provide students with a fundamental understanding of the principles and concepts of automation in manufacturing, including the use of technology and machinery to perform tasks with minimal human intervention.
- To teach students how automation can be applied to optimize manufacturing processes, reduce production time, enhance product quality, and minimize resource wastage.
- To train students in programming and controlling automated systems, including writing code for PLCs, robotics, and other automation components.
- To enhance students' ability to communicate effectively with colleagues and superiors in a manufacturing setting, especially in cross-functional teams where automation plays a crucial role.
- To help students prepare for careers in automation engineering, robotics, control systems, and related fields within the manufacturing industry by providing them with the knowledge and skills required for success.

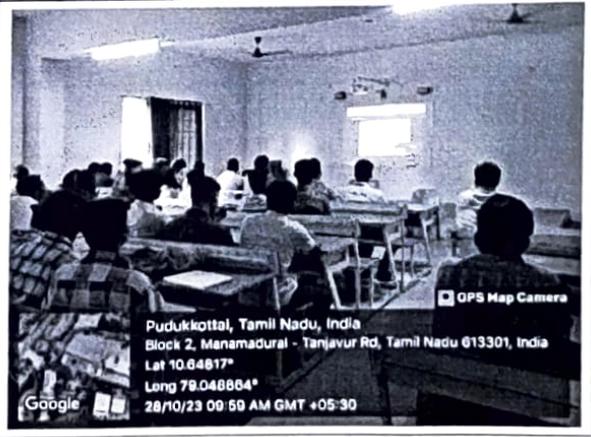
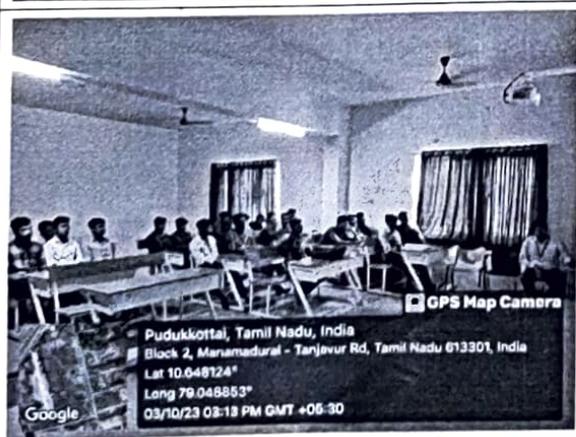
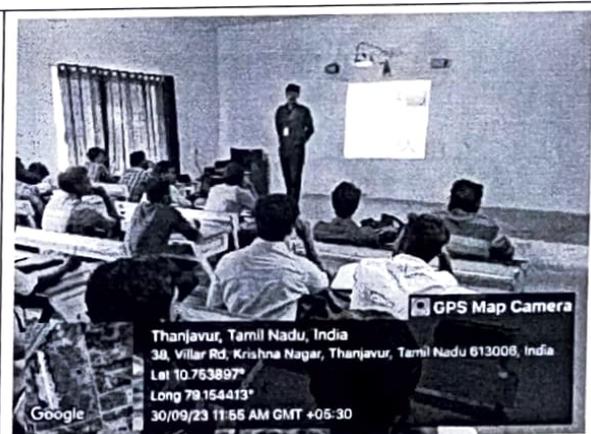
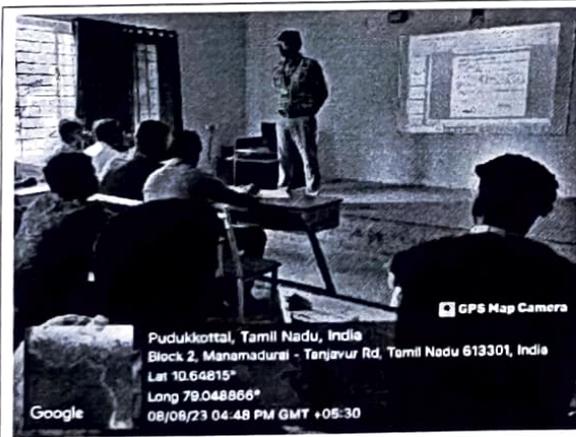
Course Outcomes

The outcomes of an automation in manufacturing course are designed to reflect the knowledge and skills that students are expected to gain upon completing the program. These outcomes demonstrate the course's effectiveness in preparing individuals for careers in the manufacturing industry with a focus on automation. Here are the expected outcomes of such a course:

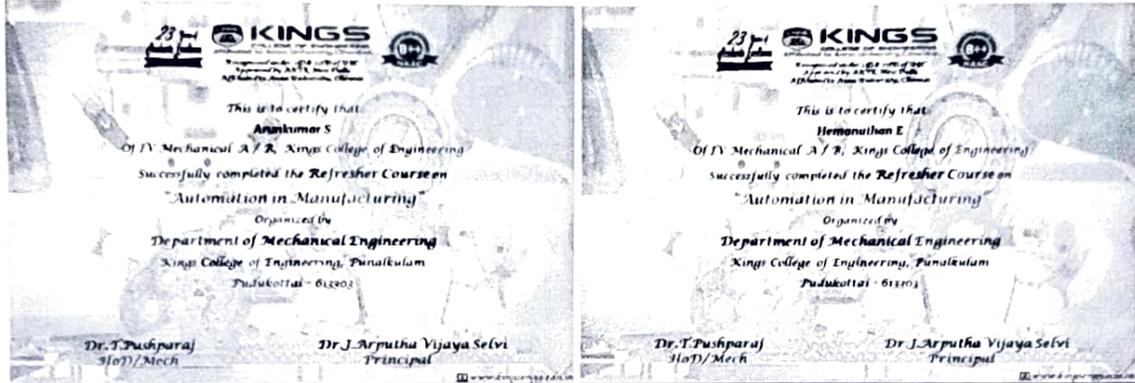
- **Comprehensive Understanding:** Graduates will possess a comprehensive understanding of the principles, concepts, and technologies related to automation in manufacturing.

- **Process Optimization:** Graduates will have the ability to apply automation principles to optimize manufacturing processes, leading to increased efficiency, reduced production time, and enhanced product quality.
- **Problem-Solving Skills:** Graduates will have developed problem-solving and critical thinking skills to diagnose and address issues in automated systems effectively.
- **Communication Skills:** Graduates will have enhanced communication skills to collaborate effectively within cross-functional teams in a manufacturing environment.
- **Career Preparedness:** Graduates will be well-prepared for careers in automation engineering, robotics, control systems, and related roles within the manufacturing industry, with the skills needed for success.

Course Screenshots



Sample Certificates



Feedback

Feedback has been collected from the students at the end of the course and the summary is given below:

Feedback	Excellent	Very Good	Satisfactory	Need to be Improved
Course content	47	21	08	03
Skill development	49	24	04	02
Motivation	54	21	03	01
Regularity & punctuality	48	23	08	-
Coverage of syllabus	43	24	09	03
Interaction	46	26	05	02
Individual attention	41	27	07	04
Outcome	49	18	10	02

H.A.
15/11/23
S.S.
15/11/23

Mr.H.Agilan
Mr.S.Sabanayagam
Staff in-charge

T. Pushpara
15/11/23

Dr.T.Pushpara
HoD/Mech

J. Arputha Vijaya Selvi
15/11/2023

Dr.J.Arputha Vijaya Selvi
Principal