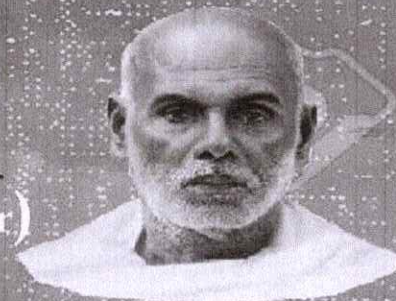


# SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY, PAYYANUR

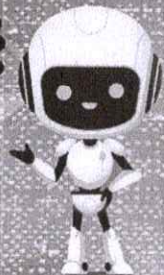
(Promoted by Sree Bhakthi Samvardhini Yogam, Kannur)  
Chalakode-P.O, Payyanur, Kannur - 670307, Kerala



## DEPARTMENT OF MECHANICAL ENGINEERING

Institution Code

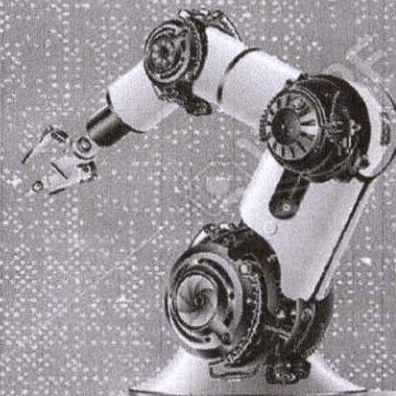
**SNC**



Organising  
Webinar On

# Confluence of Robotics & Industrial Automation

*A heuristic approach*



**Prof. Sumesh M**

Faculty in Engineering Department  
University of Technology & Applied Science  
Al Musannah, Sulthanate of Oman



Google Meet

**Date & Time**

25<sup>th</sup> June 2021  
06.30 PM - 07.30 PM

For registration:

↓ **SCAN ME** ↓



*Leena*  
**Dr. LEENA A V**  
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PAYYANUR, KANNUR

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Asst. Professor  
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Mob: +919061192878

**e- certificates will be provided for active participation**

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email: [info@sngcet.org](mailto:info@sngcet.org)

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# **SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY**

## **DEPARTMENT OF MECHANICAL ENGINEERING**

### **Webinar on CONFLUENCE OF ROBOTICS & INDUSTRIAL AUTOMATION- A HEURISTIC APPROACH**

#### **SYLLABUS**

Following are the syllabus for confluence of robotics & industrial automation:

- 1. Introduction to Robotics and Industrial Automation**
  - Overview of robotics: types, components, and applications
  - Basics of industrial automation: concepts and importance
  - Role of robotics in enhancing industrial efficiency and productivity
- 2. Heuristic Approaches in Robotics**
  - Introduction to heuristic methods and algorithms
  - Heuristic search techniques in robotics
  - Application of heuristic approaches for robot path planning and optimization
- 3. Sensors and Actuators in Industrial Robotics**
  - Types of sensors used in industrial robotics
  - Actuation systems and their role in robotic operations
  - Integration of sensors and actuators for automation tasks
- 4. Robot Kinematics and Dynamics**
  - Kinematic modeling of robotic manipulators
  - Forward and inverse kinematics
  - Dynamic analysis and control of robotic systems
- 5. Industrial Robot Programming**
  - Programming languages and environments for industrial robots
  - Offline programming and simulation techniques
  - Programming techniques for robot tasks and applications
- 6. Optimization Techniques in Industrial Automation**
  - Optimization fundamentals: objectives and constraints
  - Metaheuristic algorithms: genetic algorithms, simulated annealing, etc.
  - Optimization applications in robotic systems for efficiency improvement

  
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## **SREE NARAYANA GURU COLLEGE OF ENGINEERING AND TECHNOLOGY, PAYYANUR**

### **DEPARTMENT OF MECHANICAL ENGINEERING**

#### **Report of WEBINAR ON CONFLUENCE OF ROBOTICS & INDUSTRIAL AUTOMATION- A HEURISTIC APPROACH**

The Department of Mechanical Engineering (ME) at SNGCET hosted an enriching webinar titled "Confluence of Robotics & Industrial Automation - A Heuristic Approach" in the seminar hall on June 25, 2021. The webinar was led by Prof. Sumesh M, an esteemed faculty member in the Engineering Department at the University of Technology and Applied Science, Al-Musanna, Sultanate of Oman.

The session commenced with a warm welcome from Dr. Gangadharan Nair, Assistant Professor of Mechanical Engineering (HOD), who expressed gratitude to the participants, faculty, and students for their enthusiastic support. Dr. Nair emphasized the importance of fostering creativity and innovation in today's dynamic world, encouraging students to explore new ideas and opportunities.

The webinar covered several key topics:

**Introduction to Robotics and Industrial Automation:** Prof. Sumesh M provided an overview of robotics and its applications in industrial automation, highlighting the importance of integrating robotics to enhance efficiency and productivity in industrial processes.

**Heuristic Approaches in Robotics:** Prof. Sumesh explored heuristic methods used in robotics and industrial automation, emphasizing problem-solving techniques and optimization strategies applied in practical scenarios.

**Case Studies and Applications:** The webinar showcased case studies illustrating successful implementations of robotics in diverse industrial settings, offering insights into practical applications and benefits of robotic systems.

**Interactive Q&A Session:** The session concluded with an engaging question-and-answer segment, allowing participants to interact with Prof. Sumesh and seek clarifications on discussed topics.

Overall, the webinar provided a comprehensive understanding of the confluence between robotics and industrial automation, presenting innovative approaches to address contemporary challenges in manufacturing and process industries. Conducted seamlessly through Google Meet, the online mode enabled participation from diverse locations, allowing attendees to benefit from Prof. Sumesh M's expertise. The success of this webinar reflects SNGCET's commitment to fostering academic discourse and promoting interdisciplinary learning in emerging technologies, empowering students and professionals with the latest advancements in engineering and technology.

  
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# SREE NARAYANA GURU COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

## WEBINAR ON CONFLUENCE OF ROBOTICS & INDUSTRIAL AUTOMATION-A HEURISTIC APPROACH

### STUDENT NAME LIST

S.NO	NAME	SEMESTER
1	ABDULLA K K	S8
2	ABHIJITH K M	S8
3	AKSHAY SURENDRAN P	S8
4	ARJUN RAVEENDRAN K A P	S8
5	ARUN C	S8
6	MOHAMMED SAIF ABDUL RAUF	S8
7	MUHAMMED RAIHAN	S8
8	SHAHAS ZAKKEER	S8
9	SREYAS KUMAR K	S8
10	SUFIYAN BIN ABDUL NASSAR	S8

  
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DEPARTMENT OF MECHANICAL ENGINEERING

## WEBINAR ON CONFLUENCE OF ROBOTICS & INDUSTRIAL AUTOMATION- A HEURISTIC APPROACH

### ATTENDENCE LIST

S.NO	NAME	SEMESTER	DAY 1
1	ABDULLA K K	S8	P
2	ABHIJITH K M	S8	P
3	AKSHAY SURENDRAN P	S8	P
4	ARJUN RAVEENDRAN K A P	S8	P
5	ARUN C	S8	P
6	MOHAMMED SAIF ABDUL RAUF	S8	P
7	MUHAMMED RAIHAN	S8	P
8	SHAHAS ZAKKEER	S8	P
9	SREYAS KUMAR K	S8	P
10	SUFIYAN BIN ABDUL NASSAR	S8	P

  
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**WEBINAR ON CONFLUENCE OF ROBOTICS &  
INDUSTRIAL AUTOMATION- A HEURISTIC APPROACH**

**FEEDBACK FORM**

**Submitted by the Department of Mechanical Engineering**

	Excellent	Good	Fair	Poor
1. Overall how would you rate the training class?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. How would you rate the trainer's communication and presentation skills	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were the interactive elements engaging and beneficial	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Did you receive enough opportunity for questions and clarification during the session	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Did this class meet your expectation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were the hands-on activities beneficial in understanding concepts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Did the workshop offer practical strategies or tools that you can readily apply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were the technical aspects during the workshop satisfactory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Rate the level of interaction between the facilitator and participants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Did the workshop covers emerging trend or advancements in the field	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

  
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