CHRIST NAGAR COLLEGE
MARANALLOOR, TRIVANDRUM

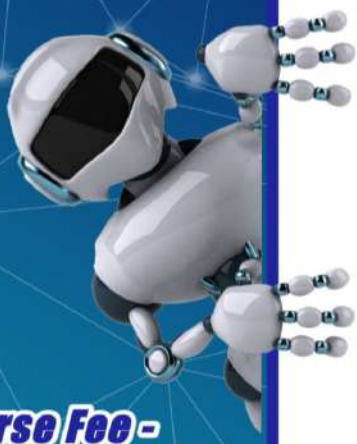
Acutro technologies

" IOT AND ROBOTICS "

(ADD-ON COURSE FOR BCA STUDENTS)

Organised by
PG Department of Computer Science and Applications

Date : 21 March 2022 To 26 March 2022
Duration : 30 Hours
Venue : Christ Nagar College, Maranalloor



Course Fee -
₹ 1000 per Student

COURSE OBJECTIVES

+ Understand the definition and significance of Robotics.
+ Recognise the factors that contribute to the emergence of Robotics.
+ Introduction to Arduino, Sensors, Motor Control and Bluetooth.
+ Hands-On training on Robotics

FACULTY COORDINATOR
MRS ANJANA C RAJAN (ASSISTANT PROFESSOR)
MOB NO - 9746447969

STUDENT COORDINATORS
MR THRIJIN T POLSON (S1 BCA) MOB NO - 7012553237
MS ANJANA SATHEESH P (S1 BCA) MOB NO - 8547735163

Five Day Hands on Experience on Robotics

Acutro technologies EPSILON LABS weave your ideas

Epsilonlabs

ACUTRO TECHNOLOGIES Private Ltd.
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ACUTROTECHNOLOGIES Pvt Ltd

We are pioneers in Technical Training programs for Engineering, Science Graduates, Diploma and Management Students and working Professionals. Our training programs are structured to provide highly skilled human resources who are competent to practice and provide technical solution in an ever-changing technology world.

Robotics

Robotics is an interdisciplinary area that combines computer science and engineering. It entails the design, development, function, and application of robots. Robotics aims to create robots that can support and aid humans. Robots may be used in a variety of circumstances and for a variety of reasons, but many are now used in hazardous conditions (such as nuclear material inspection, bomb detection, and deactivation), manufacturing processes, and other situations where humans are unable to survive (e.g., in space, underwater, in high heat, and clean up and containment of hazardous materials and radiation).Students and Professionals can integrate any number of these industry-ready certified courses into your skill-set with academics you can learn new technology and upgrade your 5.0 industry carrier.

Modules

1. Microprocessor and Microcontrollers
2. Introduction to Arduino
3. Digital Operations in Arduino
4. Analog Operations in Arduino
5. Introduction to Motor Driver
6. Motor Control using Motor Driver
7. Switch cases in Arduino
8. Introduction to Bluetooth
9. Robotics chassis design

1. Microprocessor and Microcontrollers

Introduce students with the architecture and operation of typical microprocessors and microcontrollers. To familiarize the students with the programming and interfacing of microprocessors and microcontrollers and to provide strong foundation for designing real world applications using microprocessors and microcontrollers.

2. Introduction to Arduino.

Make the students able to write simple program in Embedded C. Transform a physical input into a digital input and analyze it. Work to

complete customizable full Arduino project autonomously, from the beginning to the end. Understand the function of electronic sensors and components.

3. Digital Operations in Arduino

The Arduino's digital inputs and outputs (digital I/O) allow you to connect sensors, actuators, and other ICs. You can use the Arduino to read switch inputs, control LED indications, and control relay outputs utilizing the digital operations.

4. Analog Operations in Arduino

The Arduino’s analog inputs allow you to connect sensors, which can take measurements in the analogue domain. This could be something like a voltage, current, resistance, temperature, or light.

5. Introduction to Motor Driver

This module covers the significance of using motor driver to control motors. The Motor Driver is a module for motors that allows you to control the working speed and direction of two motors simultaneously

6. Motor Control

Introduces the primary theories and applications of motor control and learning. Focus on different type of motors and interfacing different types of motors with the Arduino board and show you how to connect the motor and drive it from your board. Control the direction of the spin of DC motor and motor speed control using PWM operation.

7. Switch cases in Arduino

This module covers the switch cases and the significance of switch cases in Robotics. It controls the flow of programs by allowing the

programmers to specify different codes that should be executed in various conditions

8. Introduction to Bluetooth

Bluetooth technology is a high-speed low powered wireless technology link that is designed to connect phones or other portable equipment together. In this session, you'll learn how to use the HC05 Bluetooth Module with the Arduino board to communicate and deliver data through Bluetooth. The outcomes are general information about Bluetooth protocol, how to send data using Bluetooth, how to send AT-Command to HC05 and control the movement of robot using Bluetooth.

Course Advantage

- Understand the definition and significance of the Robotics.
- Opens up the gateways of innovation and creativity.
- Recognize the factors that contribute to the emergence of Robotics.
- 80% practical & 20% theory methodology.
- We focus on maximum hands-on practical learning approach.

The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry. We believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.

The total number of students for this course is 50.The students will be divided into 10 groups with 5 students in a group. Each group should have a laptop to do the experiments and will be provided with separate kits.

Time Duration

Time Duration of the course is 30hrs.The students will be provided with hands on course including theory and practical. The methodology will cover 80% practical and 20% theory.

Estimate Cost

The total cost of the course is Rs.45000 (Rs.900 for each student)

Note: Two kits will be provided to college for future reference and experiments.

Contact Details:

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Lead– Industry Training

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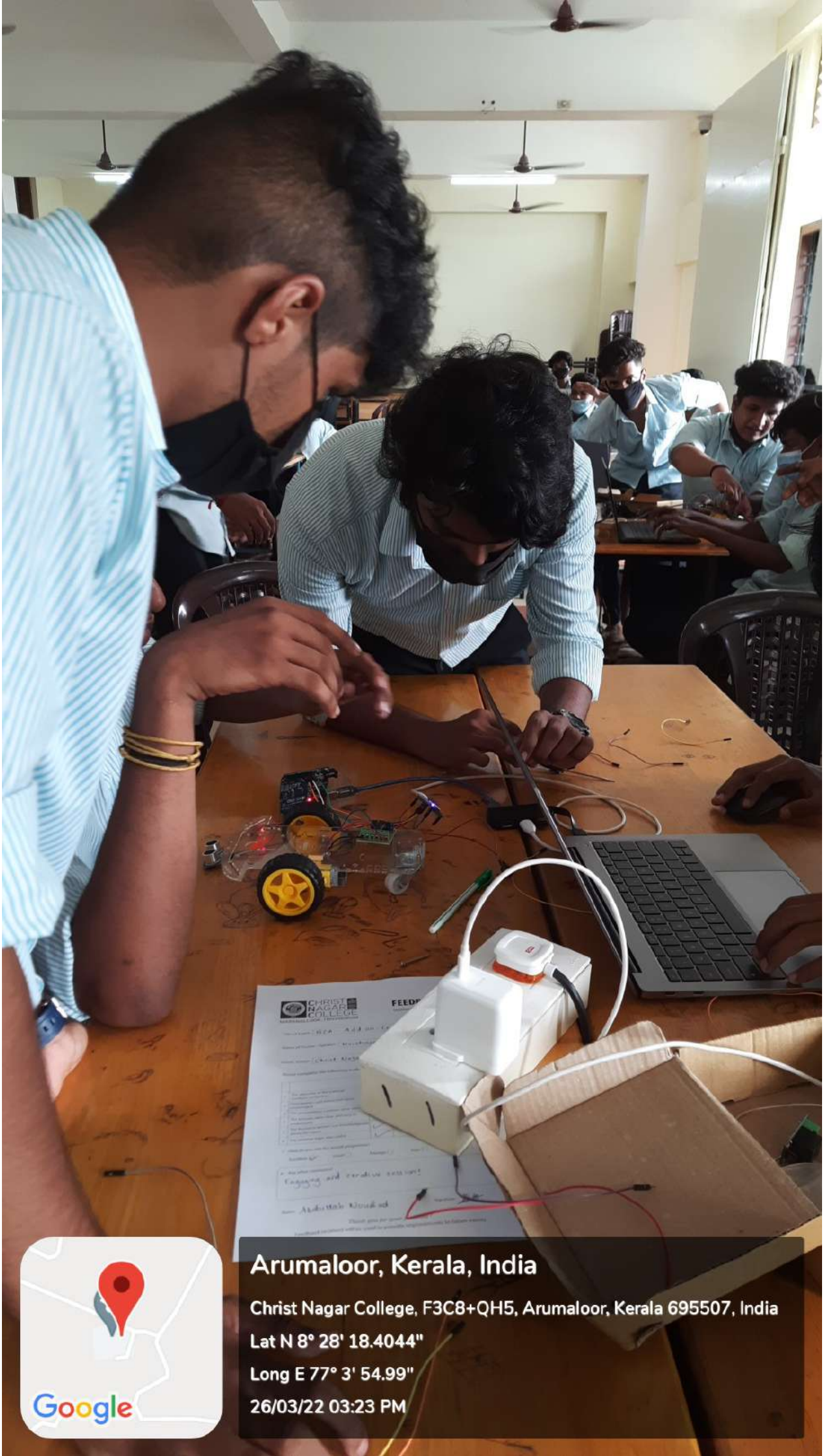
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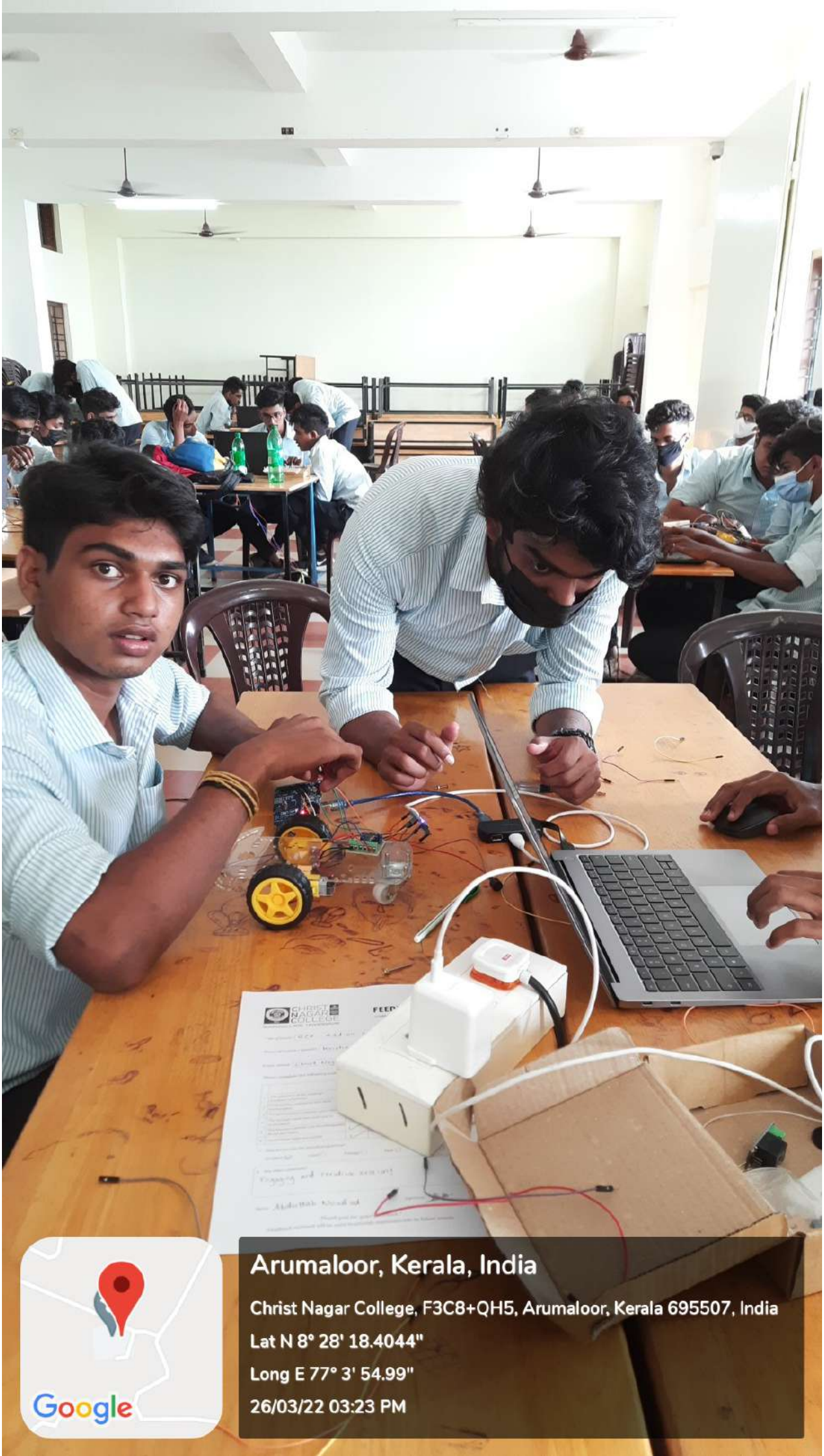
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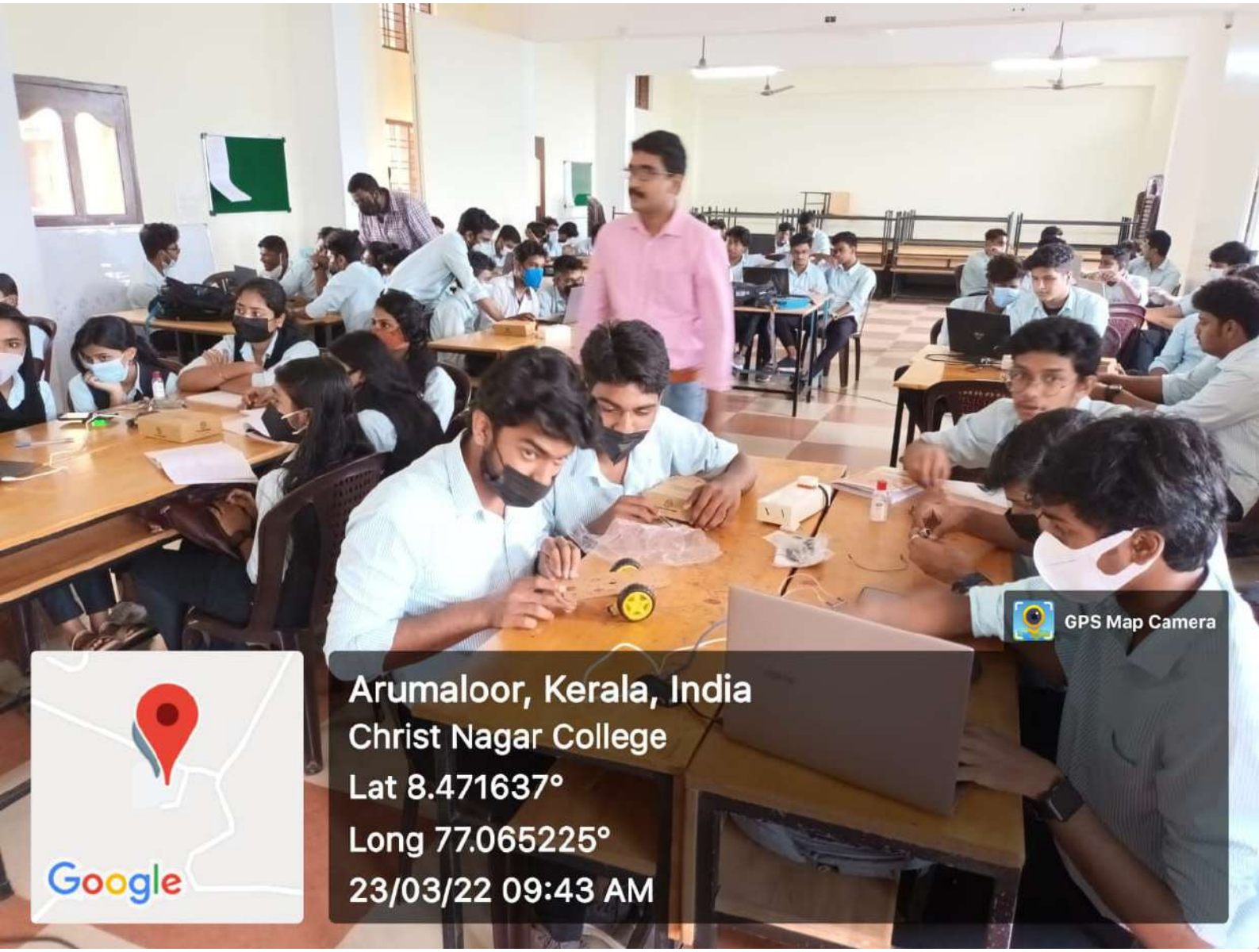
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