भारतीय गैर न्यायिक

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भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு तमिलनाडु TAMILNADU

CH 977423

தமிழ்நாடு
நாள் : 24.12.2021
மனம்: 100

RoboRAM
Nagercoil

S. இராதாகிருஷ்ணன்
முத்திரைத்தாள் விற்பனையாளர்
உரிமம் எண். 15/1993 நாள்: 1-11-93
நாகர்கோவில்-629 001

We are RoboRAM Technologies, a company specializing in industrial automation and robotics. Our primary services include PLC Automation, Microcontroller and Embedded System Development, and RPA Bot Development. We offer automation-based training programs to engineering students, professors, and working professionals through our other wing, "RoboRAM Education." We designed and developed Robotics Design & Development, a beginner level 26-hour robotics course intended to provide a complete basic level knowledge of robotic design and project implementation, which includes one project titled 6 Axis Robotic Arm development.

For Robo RAM

Proprietor

This program will benefit students by providing them with extensive knowledge of industrial robotics and their applications, as well as practical project development skills that will allow them to enter the manufacturing industry in a variety of roles such as embedded system engineer, software engineer, design engineer, research analyst, application and sales engineer.

We form a "Board of Studies" committee to ensure that the entire syllabus, training methodology, technical expertise, evaluation, and outcomes are properly structured. We choose the committee members based on their educational background, field expertise, professional and teaching experience.

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We choose seven Committee Members based on their expertise and experience, whom are listed below

Name	Profession	Committee Role
Dr. B. Vinod Meeting Conducted on 25.11.21	HOD, Dept. Robotics & Automation Engineering, PSG College of Technology, Coimbatore **Industrial Experience:** 8 Years **Academic Experience:** 21 Years **Area of Interest:** Industrial Automation	President (vinod@roborameducation.com)
Dr.P. Rajalakshmy Meeting Conducted on 27.11.21& 2.12.21	HOD, Dept. Robotics Engineering, Karunya Institute of Technology and Sciences, Coimbatore **Academic Experience:** 20 Years **No of Patents:** 2 **Area of Interest:** Sensor Technology, Mathematical Modelling and Control, Rehabilitation Robotics and Cognitive Computing	Secretary (rajalakshmy@roborameducation.com)
Dr. G. Deenadayalan Meeting Conducted on 25.11.21 & 1.12.21	Professor, Dept. Mechanical Engineering, Meenakshi College of Engineering, Chennai **Academic Experience:** 32 Years **Area of Interest:** Metallurgy and Material Science, Supply chains and composite materials	Deputy Chairman (deenadayalan@roborameducation.com)

Mr. Arunachalam Shunmuga Sundaram Meeting Conducted on 27.11.21 & 3.12.21	Lead Assessor – (ISO9001, ISO14001, ISO45001 Standards) CQI-IRCA Approved Lead Trainer – (ISO9001, ISO14001, ISO45001 Standards) **Industrial Experience:** 7 Years **Training Experience:** 10 Years **Area of Interest:** Management Systems	Team Manager (shunmugasundaram@roborameducation.com)
Dr. G. Shanmugasundar Meeting Conducted on 26.11.21 & 30.11.21	Associate Professor, Dept. Mechanical Engineering, Sairam Institute of Technology, Chennai **Academic Experience:** 15 Years **Area of Interest:** Robot Mechanism & Mechatronics system design	Associate Member (shunmugasundar@roborameducation.com)
Dr. Sundar Ganesh C S Meeting Conducted on 21.11.21 & 25.11.21	Assistant Professor, Dept. Electrical & Electronics Engineering Karpagam College of Engineering, Coimbatore **Academic Experience:** 14 Years **Area of Interest:** Digital Electronics, Microprocessors and Microcontrollers	Associate Member (sundarganesh@roborameducation.com)
Mr. Santhosh Kumar S Meeting Conducted on 13.12.21	Director, KCS Web Technologies, Chennai **Industrial Experience:** 5+ Years **Academic Experience:** 3+ Years **Area of Interest:** Mobile Application Development	Associate Member (santhoshkumar@roborameducation.com)

For detailed profile: https://roborameducation.com/bos/

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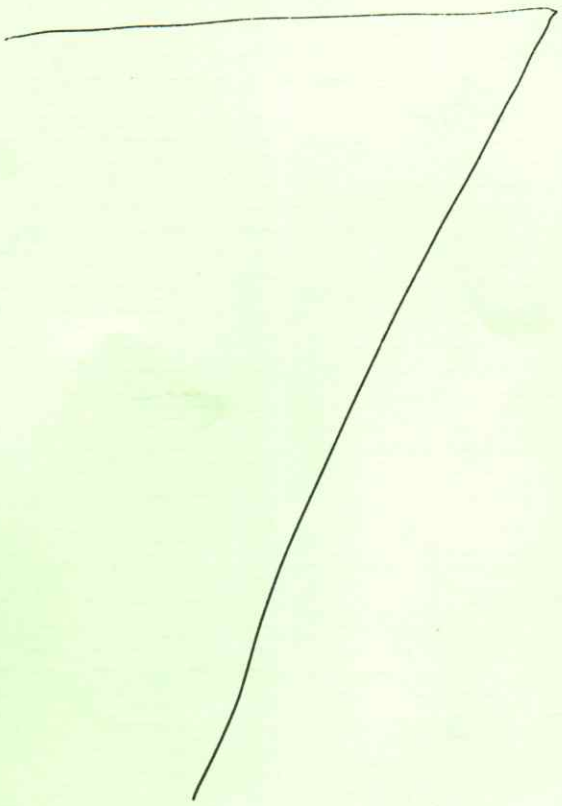
Rules for Board Members

- The company's rules allow for the replacement of board members at any time.
- Each board member's validity period is up to one year from the date (20.11.21). Board members will be replaced or retained once a year, depending on their interests and the company's norms.
- Existing members will be promoted to senior grade if we change, and they will be able to continue their responsibilities.
- If we introduce new technology, the company reserves the right to add new members or remove existing members.
- We will invite committee members to participate in knowledge-sharing program and activities as guests, trainers, and so on.
- We use each committee member's profile information with their permission.



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Each committee member evaluates the course syllabus from various perspectives and provides valuable feedback via video conference meetings in order to provide quality knowledge.

In the meeting held, each committee member verified the syllabus and provided valuable feedback. Based on these suggestions, we improved and updated the syllabus.

We finalized the course structure and syllabus after a continuous discussion and incorporated the committee members' suggestions for improvements. As a result, each member was satisfied with the syllabus and approved the course. We also declare that this course is now ready for enrollment. Based on learner feedback, we will revise and update the syllabus at frequent basis.

Members of the committee acknowledge that they approved the course.

Dr. B. Vinod

Dr.P. Rajalakshmy

Dr. G. Deenadayalan

Mr. Arunachalam Shunmuga Sundaram

Dr. G Shanmugasundar

Dr. Sundar Ganesh C S

Mr. Santhosh Kumar S

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Meeting Report

All of the review meetings with the committee members were successfully organized and completed. We modified the syllabus based on member feedback, reviewed it, and approved it in subsequent meetings. We thoroughly explained to committee members the course syllabus, model question paper, project assignments, and course booklet. In addition, we updated the syllabus based on the suggestions and changes provided by each committee member, which is essential for better course delivery.

Modifications suggested by committee members

- Along with the course title, the course level must be included.
- Along with the course title, the course duration must be included.
- Don't explain robotics in the course overview; instead, include "Introduction to robotics or prior understanding of robotics" as a separate section.
- Please provide the target audience and prerequisites separately.
- Add Prior educational experience
- Course Methodology will be included.
- 2 new objectives to be added
- Learning and enabling objectives will be added session by session.
- Assessment Methodology will be added module by module.
- Add Duration of the session (theory + exercise)
- Self-Study materials to be added, as well as self-study duration
- Please change the title of the first session to "Introduction" so that any participant who is new to the field understands that the course is described from the ground up. (The course begins with the topic "what is robotics?")
- Please rename the assessments as Quizzes. It is not fair to provide assessments after two or three sessions. We can provide after at least one module. You can make the assessments into quizzes to help learners understand.
- Add E-Booklet Provision in Key takeaways section.

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- Increase each assignment's number of questions to 20.
- Incorporate program-related questions into the final exam.
- Please confirm the program's title, as you are describing microcontroller robots rather than Industrial PLC-based robots.
- Include Humanoid Robot applications in the first module.
- In the same module, add sensors, actuators, and a controller.
- Change the Robot programming session to module 4.
- Change the titles of the first session (robot classifications) and the 14th session (servo motor – working, configuring, and controlling).
- Include 3D modelling and design related to the course.
- Please incorporate kinematics fundamentals into any part of the curriculum using software.
- Projects related to the course will be included in the internship.
- Include ros, matlab, and simulation tools in the course.
- The course code has to been added.
- Change course key takeaways to course methodologies and add course outcomes instead of what they will gain.
- Include exercises and sample programming in the e-book to make it look more like a complete course handbook.

Corrections added

- Course level and duration added along with course title
- Course prior understanding and overview added separately
- Target Audience and Prerequisite added separately
- Course Methodology added
- Overall Learning and Enabling Objectives were added, as well as specific Learning and Enabling Objectives for each module.
- Course references like text books, weblinks, tutorial videos were added
- Assessment Methodology added

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- Lecture and Practice duration added separately
- Self-Study materials added (books and weblinks)
- "Assessments" has been renamed as "Quizzes."

Purpose of addition: It was a little more difficult for participants to work out after some sessions when conducting assessments. Quizzes are one of the best ways to see how well they understand a subject.

- The title was modified from "Classification of Robotics" to "History of Robots."

Purpose of addition: From a beginner's perspective, jumping immediately into types of robots is not the best approach to get started. Prior to doing so, the evolution of robotics and automation concepts is required.

- The course highlights have been updated to include E Booklet Provision.
- In quiz 5, we added 5 new questions. As a result, the total number of questions in each quiz (min) is ten.

Purpose of addition: A reasonable number of questions in each quiz allows participants to self-assess whether they understand the concept thoroughly or not.

- In addition, we included programming-related questions in the final exam, so that participants would have to write a program based on a given condition and also find any bugs in the code.
- Program title changed to "Robot Design and Development"

Purpose of addition: We are building a 6-axis robotic arm based on 3D printing, which is not the same as industrial robots.

- Before Robotics Anatomy, kinematics concepts were incorporated.
- In the first module, include applications for humanoid robots, add sensors, actuators, and a controller to the same module, Robot programming session were not modified. Because these sections are provided as an overview to help learners realize the ideas, including them in the prior module will lengthen the time it takes to finish.
- The first session's title has been modified to History of Robots. Because we covered the basics of actuators in the first module, we didn't modify the title of the 14th session.

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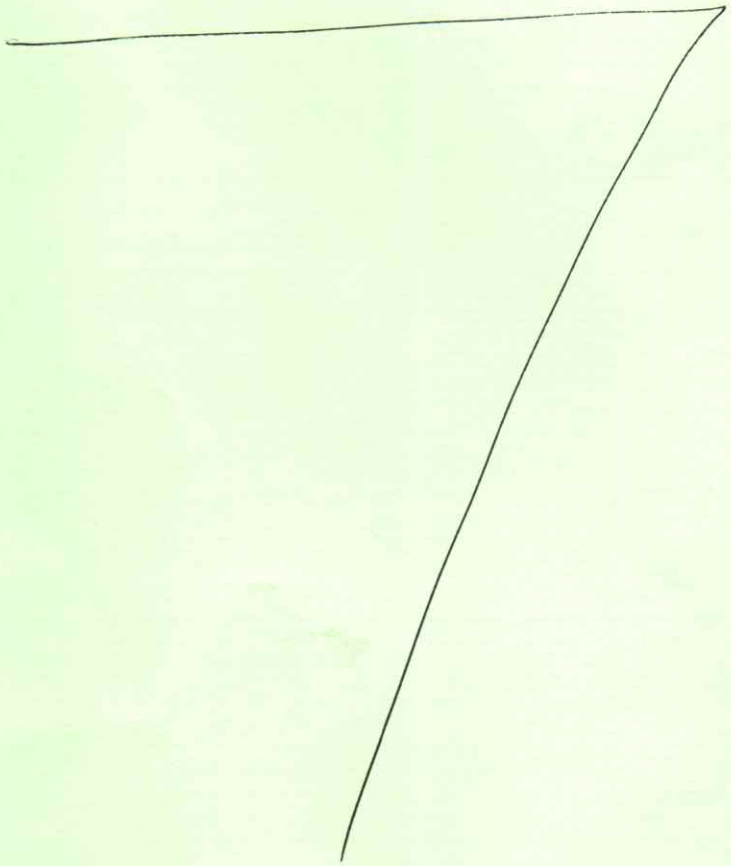
Participants will learn everything there is to know about servo motors (a vital component of this course).

- Projects related to the course included in the internship.
- Course code added

Purpose of addition: If we add more courses in the future or make changes to existing ones, having a course code is valuable.

- Instructor details, course outcome, highlights, syllabus, assessment methodology, sample certificate, quizzes, programming code, references were added in the course booklet.



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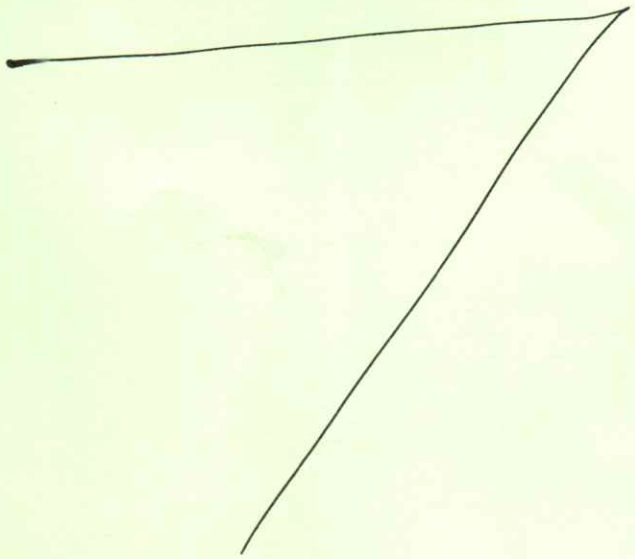
Future Additions

- This course is intended for those who are new to robotics and want to learn more about it. In the intermediate level, we intend to explain 3D modelling, ros, and MATLAB functionalities. For the advanced level, we will include real-time industrial robots to learn how to operate them, as well as load calculation, applications, and SLAM mechanisms.
- We intended to provide solutions based on real-world problems, such as mini-projects as assignments and a program code generator for scenario-based problems.
- In the forthcoming courses, nearly 70-90 percent of the application portion will be covered. As a result, participants will be aware of the specific industrial requirements and will be able to develop skills based on that knowledge.
- Plan to offer programs based on various industrial roles such as software engineer, embedded system engineer, application engineer, and so on, and what skills people need to focus on.
- We embrace collaborating with industrial experts who are willing to share their knowledge in order to gain the skill of becoming a Robotics Expert.



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We hereby declare that all of the changes we have suggested have been implemented, with the exception of a few that are being negotiated based on the course requirements. We were extremely pleased with the revised syllabus and other additions.

Dr. B Vinod

Dr.P. Rajalakshmy

Dr. G. Deenadayalan

Mr. Arunachalam Shunmuga Sundaram

Dr. G Shanmugasundar

Dr. Sundar Ganesh C S

Mr. Santhosh Kumar S

For more information about meeting discussed points and outcomes, kindly refer the Minutes of Meeting documents attached separately for your perusal.

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C.R.SIVA RAAM

MUKESH.S