



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

2. PARTICIPATIVE LEARNING

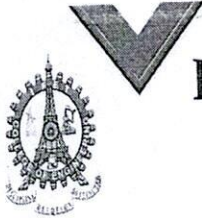


RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution



IFET College of Engineering

(An Autonomous Institution)

Approved by AICTE, Permanently Affiliated to Anna University,

Recognized under section 2(f) & 12(B) of UGC Act- 1956

Recognized Research Centre of Anna University

IFET Nagar, Gangarampalayam, Villupuram - 605 108. Website: www.ifet.ac.in



INSA SPONSORED

TWO DAYS NATIONAL LEVEL SEMINAR ON

High Energy Materials for Sensor Electronics and Artificial Intelligence

Certificate of Participation

This is to certify that ~~Dr~~/Mr/Ms D. PURUSHO THAMAN /ECE - RAAK COLLEGE OF
ENGINEERING & TECHNOLOGY has actively participated in the INSA sponsored Two Days
National Level Seminar on "High Energy Materials for sensor Electronics and Artificial
Intelligence" Organized by Department of ECE, Mech and S&H from 23rd to 24th September 2022.

Principal

Purushothaman D participated in National Level Seminar



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110




RAAK



COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)


An ISO 9001:2015 Certified Institution



IFET COLLEGE OF ENGINEERING

An Autonomous Institution  



Permanently Affiliated to Anna University,
Recognized Research Centre by DSIR (SIRO) & Anna University (ECE)
IFET Nagar, Gangarampalayam, Villupuram - 605 108.
Website: www.ifet.ac.in, Email: College@ifet.ac.in

In Association with 

GOVERNMENT VILLUPURAM MEDICAL COLLEGE AND HOSPITAL
MUNDIYAMPAKKAM, TAMILNADU

DHR-ICMR SPONSORED FIVE DAYS NATIONAL LEVEL WORKSHOP
on
MULTIMODAL DATA ANALYTICS FOR
HEALTHCARE INSIGHTS
Certificate of participation

This is to certify that Dr./Mr./Ms. RAJALAKSHMI S, M.E., ECE, RAAK.....
COLLEGE OF ENGINEERING & TECHNOLOGY.....has actively participated in
the Five Days National level Workshop on "MULTIMODAL DATA ANALYTICS
FOR HEALTHCARE INSIGHTS", Organized by the Department of Electronics
& Communication Engineering at IFET College of Engineering, Villupuram from
21st to 25th November 2022.

 Secretary  Principal

Rajalakshmi S actively participated in National Level Workshop




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution



Vishnupriya S actively participated in Harvesting Youth Leadership




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution



MANAKULA VINAYAGAR INSTITUTE OF TECHNOLOGY



(Approved by AICTE, Affiliated to Pondicherry University and Accredited by NBA)
Kalitheerthalkuppam, Puducherry - 605107.

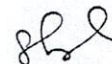
A National Level Technical Symposium


MITILENCE 2020

Participation Certificate

This is to certify that Mr./Ms. MUTHULAKSHMI N of
RAAK has participated in the
CIRCUIT DEBUGGING Event in A National Level
Technical Symposium - MITILENCE - 2020 held at Manakula Vinayagar Institute of
Technology, Puducherry on 14th & 15th February 2020.



Coordinator


HOD


Principal

Muthulakshmi N actively participated in circuit debugging




Dr. S. SEENUVASAMURTHI, M.E., Ph.C.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)


An ISO 9001:2015 Certified Institution

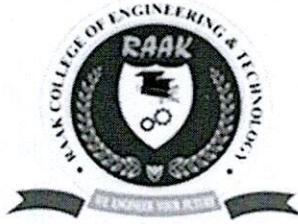


Scanned with CamScanner

Muthulakshmi N actively participated in Harvesting Youth Leadership




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

IFET
COLLEGE OF ENGINEERING
(An Autonomous Institution)

Permanently Affiliated to Anna University,
Recognized under section 2(D) & 12(B) of UGC Act- 1956.
Recognized Research Centre of Anna University (CSE, ECE, Physics & Chemistry).
IFET Nagar, Gangarampalayam, Villupuram - 605 108. Website: www.ifet.ac.in

NBA ACCREDITED COURSES
ACCREDITED BY NAAC

Scanned with CamScanner

Certificate of Participation

This is to certify that *Dr/Mr/Ms..N.: MUTHULAKSHMI.....*
Department of .ECE..... of .RAAK.COLLEGE.OF.ENGINEERING.&TECHNOLOGY... has
participated in one day CSIR sponsored seminar on "IoT Based Smart
Information System for Healthcare Applications" at IFET Colege of Engineering,
Villupuram on 20th January 2020 .

V. Jayaraj
HoD

Principal

V. Raju
Chairman

Muthulakshmi N actively participated in one day seminar



[Signature]
Dr. S. SEENUVASAMURTHI, M.E., Ph.C.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110

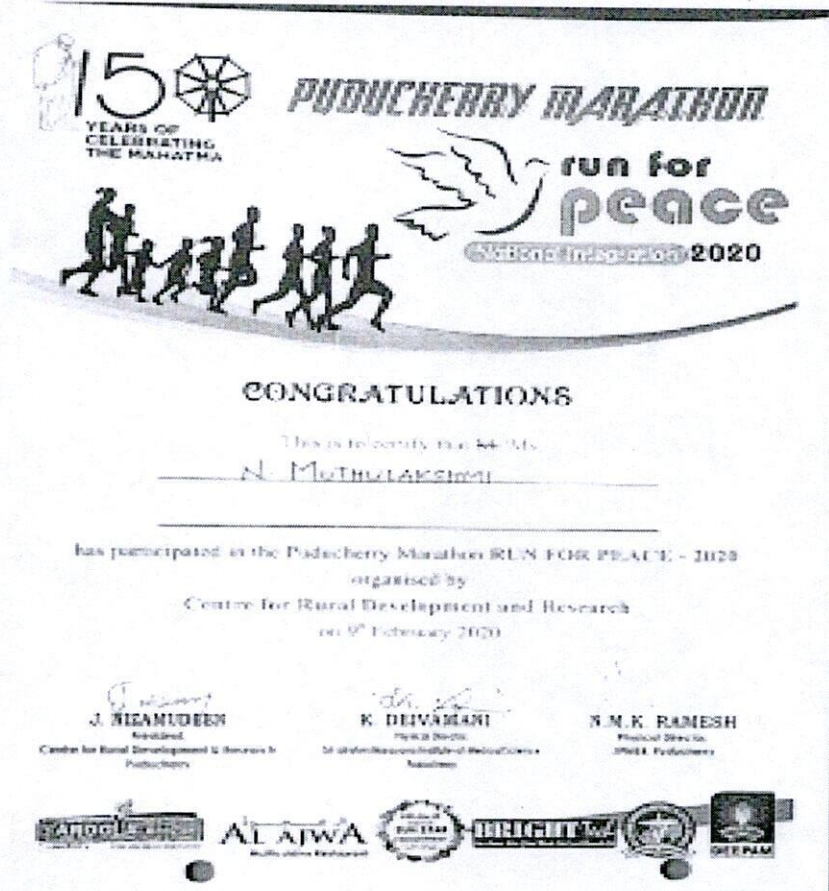


RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

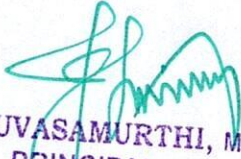
(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution



Muthulakshmi N actively participated in Marathon




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

[Approved by AICTE, New Delhi & Affiliated to Pondicherry University]

An ISO 9001:2015 Certified Institution

	<h1>CERTIFICATE</h1> OF APPRECIATION	
	THIS CERTIFICATE IS PRESENTED TO	
	<u>S. VISHNUPRIYA</u>	
	has attended and successfully completed the	seminar in
	<u>WEB-DESIGNING</u>	
	held on <u>19-12-2021</u>	
	ISSUED ON : <u>22-12-21</u>	
	PLACE : <u>PONDY</u>	CHIEF EXECUTIVE OFFICER

Vishnupriya s actively participated in Web - Designing



Dr. S. SEENUVASAMURTHI, M.E., Ph.C.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)


An ISO 9001:2015 Certified Institution

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

GROUP DISCUSSION

1. Group discussion brings together different view points and ideas, fostering creativity and innovation.
2. Group discussion on "Impact of Social Media" on 17.10.2022 for all ECE students in seminar hall.
3. All students actively participated and discussed the merits and demerits of social media impact.
4. This activity helped the students to know about the various aspects of participative learning like how to start the discussion, how to express the views and conclude the discussion.
5. Mr. K Murugan HoD/ECE judged the discussion and the event was organized by Mrs. H. Rajeswary, AP/ECE.




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

GROUP DISCUSSION

1. Group discussion brings together different view points and ideas, fostering creativity and innovation.
2. Group discussion on “Climatic change and Environmental Conservation” on 27.03.2023 for all ECE students in seminar hall.
3. All students actively participated and discussed the impact of climatic change in environmental conservaion .
4. This activity helped the students to know about the various aspects of participative leaning like how to start the discussion, how to express the views and conclude the discussion.
5. Ms. R. Aarthi AP/ECE judged the discussion and the event was organized by Mrs. S. Sultana Farveen, AP/ECE.



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,
PRINCIPAL

RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

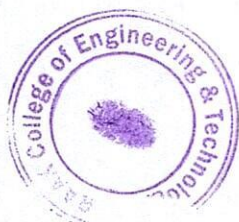
(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACADEMIC YEAR 2022 - 2023

PROJECT TITLE WITH BATCH

B.NO	PROJECT TITLE	REG.NO	NAME OF THE STUDENT	PROJECT GUIDE
B1	Efficient Routing Protocol for Optimal Route Selection Using Distributed Trust Optimization Model	19TC1113	RESMINA FARVIN M	Mr. K. MURUGAN, HoD/ECE
		19TC1118	YOGAA SUPARNA K P	
B2	Smart Security Tracking Device Using Ibeacons for Human Safety Device	19TC1101	ABIRAMI S	Mrs. S. SULTANA FARVEEN, AP/ECE
		19TC1117	SUGANYA M	
B3	Prediction of Diabetics Using Deep Learning	19TC1104	GAUTHAM S	Mr. K. MURUGAN, HoD/ECE
		19TC1105	GOVINDARAJ K	
B4	False Event Message Detection Robust to Burst Attack in Wireless Sensor Network	19TC1115	SATHISH N	Mrs. H. RAJESWARY, AP/ECE
		19TC1116	SOORIYA D	
B5	An IOT Based on Smart Agriculture Monitoring System using Arduino	19TC1112	RAJALAKSHMI S	Ms. R. AARTHI, AP/ECE
B6	Biological Structure Identification Using Machine Learning	19TC1107	MUTHURAMAN I	Mrs. K. DHANALAKSHMI, AP/ECE
B7	An Intelligent Self-Sustained RAN Slicing Framework For Diverse Service Provisioning in 5G Beyond 6G Networks	19TC1106	KARTHESWARAN I	Mr. K. MURUGAN, HoD/ECE
		19TC1113	DINESH KUMAR V	



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110




RAAK


COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

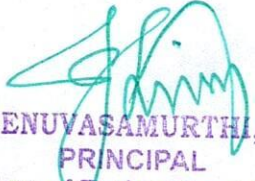
B8	Automatic Medical Dispatcher With Dynamic Tele-Monitoring System Using IOT	19TC1110	NARAYANAN B	Mrs. S. SULTANA FARVEEN, AP/ECE
		19TC1114	JEEVANANDAM S	


PROJECT COORDINATOR


HOD


PRINCIPAL
Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110

**AN IoT-BASED SMART AGRICULTURE MONITORING
SYSTEM USING ARDUINO**

PROJECT REPORT (Phase II)

Submitted by

S. RAJALAKSHMI

REGISTER NO: 19TC1112

Under the guidance

of

**Ms. R. AARTHI, M.Tech.,
ASSISTANT PROFESSOR / ECE**

*in partial fulfillment for the award of the degree
of*

**BACHELOR OF TECHNOLOGY
in**

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



**RAAK COLLEGE OF ENGINEERING AND TECHNOLOGY
PONDICHERRY UNIVERSITY
PONDICHERRY, INDIA**

APRIL / MAY 2023



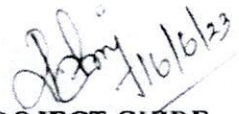

Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110


RAAK COLLEGE OF ENGINEERING AND TECHNOLOGY
PONDICHERRY UNIVERSITY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

BONAFIDE CERTIFICATE

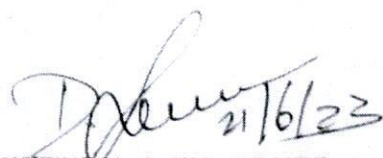
This is to certify that the project work entitled "AN IoT BASED SMART AGRICULTURE MONITORING SYSTEM USING ARDUINO" is a bonafide work done by S. RAJALAKSHMI (19TC1112) in partial fulfillment of the requirement for the award of B.Tech Degree in DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING by Pondicherry University during the academic year 2022 – 2023.


PROJECT GUIDE
Ms. R. AARTHI, M.Tech.,
Assistant Professor


HEAD OF THE DEPARTMENT
Mr. K. MURUGAN, M.Tech., MBA.,
Assistant Professor & Head

Submitted for the University Practical Viva-Voce Examination held on...21.06.2023


INTERNAL EXAMINER


EXTERNAL EXAMINER




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110

ACKNOWLEDGEMENT

We express our deep sense of gratitude to **JANAB. Er. B. MOHAMED FAROUK**, Chairman, **Mr. Z. ABDUL RAHIMANE**, Trust Secretary of **Farouk Educational Trust, Puducherry** and also, we would like to thank to our Secretary, **Mr. M. EMTHIYAS**, **RAAK College of Engineering and Technology** for providing necessary facilities to successfully complete our project and report works.

We are deeply grateful to thank our Principal **Dr. S. SEENUVASAMURTHI, M.E., Ph.D.**, for provided necessary facilities and encouragement for successful completion of this project work.

We express our deep sense of gratitude to **Mr. K. MURUGAN, M.Tech., MBA., Head of the Department**, and our project coordinator for their support in making necessary arrangements for the conduction of project work and also for guiding us to execute and complete our project successfully within the stipulated time

We would like to express our heartfelt gratitude to our project guide **Ms. R. AARTHI, M.Tech., Assistant Professor, Department of ECE** for her consistent reviews which motivated us in completing the project.

We thank all our department faculty members, non-teaching staffs and my friends of Electronics and Communication Engineering for helping us to prepare and successfully complete the documentation work in time.

We would like to express our eternal gratitude to our parents for the sacrifices they made for educating and preparing us for our future and their everlasting love and support. We thank the Almighty for blessing us with such wonderful people and for being with us always.

S.RAJALAKSMI |19TC1112|




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110

ABSTRACT

Agriculture is the worldwide main livelihood of human being. 64% of total available land is occupied by the agriculture, and it consumes 85 % of available fresh water. Internet of things is connecting and monitoring various devices and sensors through internet. This paved the way for agriculture automation and monitoring which makes human life more comfortable and secured. In this project, Smart Agriculture Automation System(SAAS) using cloud networking and wireless communication to provide the user with control of irrigation process and collecting plant information further utilized for tracking and predicting crops and weather parameters using temperature sensor, fertilizer sensor, soil moisture sensor and ultrasonic sensor. In the hardware interface, the integration of ESP8266 Wi-Fi technology for controlling sensors is manifested and this system that can be controlled via Arduino, users will be able to access the system from smartphone, laptop, tablet and desktop computer. This device detects the presence of any living being by using either Ultrasonic Sensor, especially animals around the land to be cultivated, along with smart irrigation control and real-time data analysis which is also inclusive of smart warehouse management parameters like- temperature, humidity and pressure measured by using DHT22 Sensor and BMP180 Sensor. This data may either be visualized by using the Arduino IDE Software or received in the form of messages through the IoT. To combat the ruckus caused by animals, detection of their presence along with a laser security system has been provided in the proposed system. Efforts have been made to help the farmer in rectifying multiple issues at once. This system is designed to be low cost and expandable allowing a variety of devices to be controlled.

Keywords: Smart Agriculture Automation System (SAAS), Arduino UNO, ESP8266 Wi-Fi, Cloud Networking, sensors.




Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110

CHAPTER 8

CONCLUSION AND FUTURE ENHANCEMENT

8.1 CONCLUSION

Technology is progressing towards a world where everything is connected and IoT is there to achieve this. This promise is being realized by several industries who have moved into automating and interconnecting themselves with the help of IoT. This gives the users opportunities for better data analysis and provides guidance into faster and more efficient industries. The project utilizes the features of IoT and aims at implementing this to the agricultural process of farming - with the hopes of resolving some of the issues in this area. The agriculture field is being monitored and controlled by MyMQTT Web app at user end. The ESP8266 is the device at field end which receives the messages from broker network and manipulates it and will perform the function mentioned in message. After it will send the messages to broker network and inturn it will be published to the Client (user end). The ESP8266 is the best device for IoT projects. Since it is small, compact, lightweight, easily programmable, and easily installable and have enough GPIO pins to use them. Agricultural technologies are being modernized and day by day farmers are opting newer technologies and methods to cultivate crops. Similarly, the project would help the farmers to monitor and control the entire farming process which would cause an overall increase in the yield of crop production.

8.2 FUTURE ENHANCEMENT

- Future scope of this type of robots are very bright because it is very useful in agriculture and reduce the workload.
- It reduce the time consumed in spraying the pesticide liquid and works very effectively.
- It will help the farmers to do work in any season and conditions.





RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

An ISO 9001:2015 Certified Institution

Students successfully completed online courses in coursera



Foundations of Digital Marketing and E-commerce
Attract and Engage Customers with Digital Marketing
From Likes to Leads: Interact with Customers Online
Think Outside the Inbox: Email Marketing
Assess for Success: Marketing Analytics and Measurement
Make the Sale: Build, Launch, and Manage E-commerce Stores
Satisfaction Guaranteed: Develop Customer Loyalty Online



Apr 10, 2023

Raaga Ramya DR

has successfully completed the online, non-credit Professional Certificate

Google Digital Marketing & E-commerce

Those who earn the Google Digital Marketing & E-commerce Professional Certificate have completed seven courses, developed by Google, that include hands-on, practice-based assessments and are designed to prepare them for entry-level roles in the field. They are competent in foundational skills in digital marketing and e-commerce.

Read more about Google and its products on our website: <https://www.google.com/about/>. For more information on our products, visit <https://www.google.com/education/>. The Google Professional Certificate program is a partnership between Google and Coursera. For more information, visit <https://www.coursera.org/google/>.

Verify this certificate at: <https://www.coursera.org/google/certificate/raaga-ramya-dr>



Foundations of Digital Marketing and E-commerce
Attract and Engage Customers with Digital Marketing
From Likes to Leads: Interact with Customers Online
Think Outside the Inbox: Email Marketing
Assess for Success: Marketing Analytics and Measurement
Make the Sale: Build, Launch, and Manage E-commerce Stores
Satisfaction Guaranteed: Develop Customer Loyalty Online



Apr 12, 2023

GOWSIKA A

has successfully completed the online, non-credit Professional Certificate

Google Digital Marketing & E-commerce

Those who earn the Google Digital Marketing & E-commerce Professional Certificate have completed seven courses, developed by Google, that include hands-on, practice-based assessments and are designed to prepare them for entry-level roles in the field. They are competent in foundational skills in digital marketing and e-commerce.

Read more about Google and its products on our website: <https://www.google.com/about/>. For more information on our products, visit <https://www.google.com/education/>. The Google Professional Certificate program is a partnership between Google and Coursera. For more information, visit <https://www.coursera.org/google/>.

Verify this certificate at: <https://www.coursera.org/google/certificate/gowsika-a>



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
 RAAK College of Engineering & Technology
 No.1, Muthupillai Palayam Road,
 Sulthanpet Post,
 Puducherry - 605 110.



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

Students successfully completed online courses in coursera



Apr 10, 2023

MOHANDASS T

has successfully completed the online, non-credit Professional Certificate

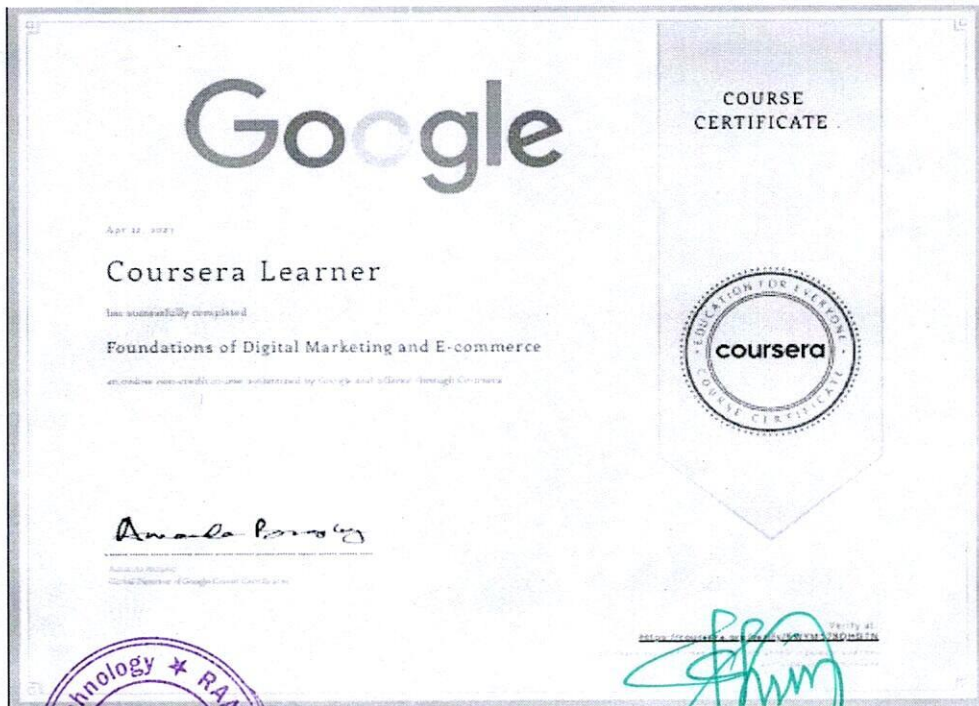
Google Digital Marketing & E-commerce

Those who earn the Google Digital Marketing & E-commerce Professional Certificate have completed seven courses developed by Google. The course includes on practice-based assessments and are designed to prepare them for entry-level roles in the field. They are competent in foundational skills in digital marketing and e-commerce.

- Foundations of Digital Marketing and E-commerce
- Attract and Engage Customers with Digital Marketing
- From Likes to Leads: Interest with Customers Online
- Think Outside the Inbox: Email Marketing
- Assess for Success: Marketing Analytics and Measurement
- Make the Sale: Build, Launch, and Manage E-commerce Stores
- Satisfaction Guaranteed: Develop Customer Loyalty Online

Requires an internet connection. The certificate is not a degree and does not guarantee employment. For more information, visit <https://www.coursera.org/professional-certificates/google-digital-marketing>. This certificate is not a degree and does not guarantee employment. For more information, visit <https://www.coursera.org/professional-certificates/google-digital-marketing>.

Verify this certificate at: <https://coursera.org/professional-certificates/google-digital-marketing>



Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
PRINCIPAL
RAAK College of Engineering & Technology
No.1, Muthupillai Palayam Road,
Sulthanpet Post,
Puducherry - 605 110