



12.06.2019

Trichy.

To

Dr.P.Sathyabharathi, M.B.B.S,

Jeyaram Clinics,

Nachallur, Kulithalai,

Trichy Road, Karur- 639104

Dear Sir/Madam,

Sub: Requisition letter for short-term project -Reg.

Greetings!

Indra Ganesan College of Engineering, Manikandam, Tiruchirappalli, Tamil Nadu was established with a noble vision of providing higher education in the field of Engineering for the student community, especially from the rural areas.

Indra Ganesan College of Engineering, Trichy is one of the institutions affiliated with Anna University, Chennai. Our institution promotes and encourages the students to undergo short-term projects to cultivate their practical knowledge to bridge the gap between industry and academic curriculum.

Students of the Electronics Communication Engineering department are interested to do short term project related to bio medical field with the facilities available in our college. I request you to accept our request and guide them to achieve their goal. The goodwill of your organization is always going to add value to the student's resumes.




Dr.S.BHARATHI RAJA

PRINCIPAL



Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

Madurai Main Road,
NH-45B, Manikandam
Tiruchirappalli – 620 012
Tamil Nadu, South India

Mobile: 85086 88845
Phone: 0431 2906565
Web: www.igceng.in
igceprincipal@gmail.com

ஜெயராம் கிளினிக்

நச்சலூர், குளித்தலை வட்டம், திருச்சி ரோடு, கரூர் மாவட்டம் - 639110. தொடர்புக் : 9585726268

Dr.J.ரமேஷ், M.B.B.S.,ACMDC

பதிவு எண் : 80120, அரசு மருத்துவர்

சரிக்கரை நோய், குழந்தைகள் மற்றும்

வளாதரநல மருத்துவர்



Dr.P.சத்யபாரத், M.B.B.S.,

பதிவு எண் : 149287

பணி மருத்துவர்

Trichy

18.6.2019

To

The Principal,
Indra Ganesan College of Engineering,
Madurai Main Road (NH-45B), Manikandam,
Trichy – 620 012

Dear sir/Madam,

Sub: Invitation to collaborate on a Short term project endowment “**Real Time Health Monitoring using IOT Sensors**”

We are excited to accept your invitation from ECE department of Indra Ganesan College of Engineering, Trichy to collaborate with us on a short-term project on “**Real Time Health Monitoring uses IOT Sensors**” in time period of two months. We believe that our combined strengths will result in a successful and mutually beneficial collaboration. Let us know your early convenient to explore the budget details to complete the “**Real Time Health Monitoring using IOT Sensors**” consultancy development. We are open to scheduling a meeting to discuss the project details in person or via a virtual platform.

For Jeyaram Clinics

With Best Regards

Managing Director

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering

IG Valley, Madurai Main Road

Manikandam, Trichy-620 012.



20.06.2019

Trichy.

To

Dr.P.Sathyabharathi, M.B.B.S,

Jeyaram Clinics,

Nachallur, Kulithalai,

Trichy Road, Karur- 639104

Respect Sir/Madam,

Sub: Submission of Short-term project endowment quotation – Reg

Ref.: Your Letter Dated 18.06.2019.

We would like to thank for considering our short-term project proposal. To follow up on your letter, the ECE Department has assigned team of 3 students with Project Investigator Dr.R.RajaMohamed to carry out the consultancy endowment for your esteemed organization. We would like to bring to your kind notice that the quotation for the consultancy endowment “**Real Time Health Monitoring using IOT Sensors**” and may cost **Rs 60,000/-**. The quotation details and time line for each stage of work is presented below.

FINANCIAL DETAILS

S.NO	DESCRIPTION	TIME DURATION IN WEEKS	COST IN Rs
1.	Circuit Design	1 Week	5,000/-
2.	Sensor purchase	1 Week	10,000/-
3.	Development Phase	2 Weeks	20,000/-
4.	Product Testing and Delivery	1 Week	21,000/-
5.	Training and Documentation	1 Weeks	4,000/-
Total		6 Weeks	60,000/-

We commit to provide technical assistance from our end to ensure successful completion of project with prompt delivery and we are looking forward to your kind consideration of our consultancy endowment proposal. In this regard, we request you to contact us with any queries about the design and delivery of the project.


Project Investigator

[Dr.R.Raja Mohamed]


Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering

IG Valley, Madurai Main Road
Manikandam, Madurai-620 012.




Dr.S.BHARATHI RAJA

PRINCIPAL

Madurai Main Road,
NH-45B, Manikandam
Tiruchirapalli – 620 012
Tamil Nadu, South India

Mobile: 85086 88845
Phone: 0431 2906565
Web: www.igceng.in
igceprincipal@gmail.com

உ
ஜெயராம் கிளினிக்

நச்சலூர், குளித்தலை வட்டம், திருச்சி ரோடு, கரூர் மாவட்டம் - 639110. தொடர்புக்கு : 9585726268

Dr.J.ரமேஷ், M.B.B.S.,ACMDC

பதிவு எண் : 80120, அரசு மருத்துவர்

சர்க்கரை நோய், குழந்தைகள் மற்றும்

வளாத்நல மருத்துவர்



Dr.P.சத்யபாரத், M.B.B.S.,

பதிவு எண் : 149287

பணி மருத்துவர்

Trichy

22.06.2019

To

The Principal,

Indra Ganesan College of Engineering,

Madurai Main Road (NH-45B), Manikandam,

Trichy – 620 012

Dear Sir,

Sub.: Sanction of Fund for “**Real Time Health Monitoring using IOT Sensors**”-reg.

We really appreciate all of your hard work in making this consultancy endowment, and We are pleased to inform you that, we are accepted and approving a sum of Rs.60,000/- (Rupees Sixty Thousand Only) towards the “**Real Time Health Monitoring using IOT Sensors**” project work. It is essential that the work is to complete within the stipulated time.

For Jeyaram Clinics

With Best Regards


Managing Director



Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering

Manikandam, Madurai Main Road

Trichy-620 012.



13.08.2019

Trichy.

To

Dr.P.Sathyabharathi, M.B.B.S,
Jeyaram Clinics,
Nachallur, Kulithalai,
Trichy Road, Karur- 639110

Respect Sir/Madam,

Sub: Submission of Short term project endowment- Reg

Ref.: Your Letter Dated 22.06.2019


We are glad to let you know that the project “**Real Time Health Monitoring using IOT Sensors**“ has been successfully completed. We wish to implement the same at your concern. In this regard, our team members will implement the successfully completed at your organization in your convenient date.

Kindly make arrangements and expecting your co-operation.

Project Investigator
[Dr.R.Raja Mohamed]




Dr.S.BHARATHI RAJA
PRINCIPAL


Dr. G. Baiakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

Madurai Main Road,
NH-45B, Manikandam
Tiruchirapalli – 620 012
Tamil Nadu, South India

Mobile: 85086 88845
Phone: 0431 2906565
Web: www.igceng.in
igceprincipal@gmail.com



Indra Ganesan

COLLEGE OF ENGINEERING

Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli- 620 012

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

SHORT TERM PROJECT ENDOWMENT REPORT

Real Time Health Monitoring using IOT Sensors

Submitted to

Dr.P.Sathyabharathi, M.B.B.S,

Jeyaram Clinics,

Nachallur, Kulithalai,

Trichy Road, Karur- 639104

Delivery Date: 20.08.2019

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering

IG Valley, Madurai Main Road

Manikandam, Trichy-620 012.

PROJECT REPORT

Objective:

The internet of things (IoT) is a ubiquitous technology that plays a major role in monitoring the health condition of patients and is the backbone in the development of the healthcare sectors. IoT provides a platform for the physically inconsistent patients to consult the doctor and can quickly respond to the patient's needs, and the doctors can have interactions with the patients. There is a huge increase in applications on remote patient monitoring using IoT sensors. IoT has been adopted in hospitals, surgical centers, clinics, medical care centers, clinical research organizations, and research and diagnostic laboratories. Healthcare applications using IoT sensors include telemedicine, remote scanning, remote patient monitoring, sample management, inpatient monitoring, clinical operations, and workflow management. This chapter describes the overall framework of the IoT and the hindrances and challenges faced by implementing IoT in health monitoring. It also focuses on the various IoT medical devices that are used for health monitoring, technologies that are integrated with IoT, and applications of integrating IoT for health monitoring.

Project Description:

In this short term project, integration of different biomedical sensors is implemented to monitor the health status of the patient. Basically biomedical sensor are analog in nature, the analog data from the sensors are required to be converted into a digital data for further processing, Arduino Uno is a controller board used to convert the analog data from the biomedical sensors into digital data, the conventional parameter has to be analyzed by the healthcare center, the parameter received at the healthcare center is stored in the respective patient database, if the abnormal condition is detected an alert message is sent to a doctor via Wi-Fi module. The figure1 shows block diagram which gives the overview of the proposed system. The system consists of mainly microcontroller (ATmega328), ESP8266-wi-fi module, sensor networks and control switches

Conclusion

The real time monitoring and immediate assessment of the patient health condition plays a very important role in saving the life of the human. The proposed system includes five biomedical sensors which are more primarily required to measure the vital sign changes of our body anytime. The patient module integrated with temperature sensor, heart rate sensor, ECG sensors, blood pressure sensor and pulse oximetry sensor. These necessary parameters are continuously monitored, usually the sensors signals are analog in nature, to process the signal, arduino uno board is used. The physiological parameters of the patient

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Pozundam, Trichy-620 012.

transmitted to the healthcare center through Wi-Fi module are used for examining or to determine the patient health condition. The data received is compared with the threshold value to predict the health status, if any abnormal condition is determined via Wi-Fi an alert SMS is sent to respective physician for diagnosis and also to the patient. The system helps in the early detection of many medical issues and help full for pre-diagnosis



Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.



23.08.2019

Trichy

UTILIZATION CERTIFICATE

Certified that the amount of Rs.60, 000/- (Sixty Thousand Only) was sanctioned by Jeyaram Clinics during the academic year (2019-2020), in favor of department of Electronics Communication Engineering, Indra Ganesan College of Engineering, Manikandam, Trichy for short term project endowment titled "Real Time Health Monitoring using IOT Sensors". The purpose of amount sanctioned has been fulfilled and delivered as per conditions of grant were satisfied.

Project Investigator
[Dr.R.Raja Mohamed]



Dr.S.BHARATHI RAJA
PRINCIPAL

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.