



# Activity Report 2015 - 16



## Government Engineering College Idukki

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# **INTRODUCTION**

## **About the College**

Government Engineering College, Idukki (GECI) was established in the year 2000, under the Directorate of Technical Education, Government of Kerala. The college is affiliated to Mahatma Gandhi University, Kottayam and is approved by the All India Council for Technical Education, New Delhi. The scenic 25-acre (100,000 m<sup>2</sup>) campus is located at Kuyilimala, Painavu, the headquarters of the Idukki district which is at a distance of 60 kilometers from Thodupuzha or Kothamangalam (co-ordinates: 9°50'52"N 76°56'32"E). The campus is situated near state highway 33 from Thodupuzha to Kattapana. Painavu is 120 km from Cochin and 130 km from Kottayam and is connected by buses to all parts of the state. The cool and picturesque environs of the Idukki wildlife sanctuary located in close proximity to the campus is ideal for the pursuit of higher education. The Idukki Dam is just 7 km from the campus.

Being a fully Government owned Institution; GECI is committed to the Government of India's policy of uplifting the society by imparting professional education to the students. The Institution offers five undergraduate courses: Electrical and Electronics Engineering (EEE), Electronics and Communication Engineering (ECE), Computer Science and Engineering (CSE), Information Technology (IT) & Mechanical Engineering. The P G Courses offered are M. Tech (Electrical and Electronics with specialization in Power Electronics) in the EEE Department, M Tech in Computer Science and Systems Engineering in the CSE Department, M. Tech (Network Engineering) in the IT Department and M.Tech (Embedded Systems) in the ECE Department.

The admission to the B.Tech programme in GECI is based on a Common Entrance Examinations conducted by the Commissioner of Entrance Examinations, Government of Kerala. The M.Tech admissions are based on the rank list prepared by the Director of Technical Education which is purely based on merit. The Institution has well qualified faculty, and the institution encourages upgradation of faculty qualification by the Quality Improvement Programme (QIP).

GECI has implemented Information and Communication Technology (ICT) initiatives of the Govt. of Kerala and as a part of it, class rooms have been converted as smart class rooms. Class rooms, seminar halls, Laboratories and faculty rooms have been provided with internet connectivity. The institution has Knowledge/Learning Management System which facilitates storage, sharing and retrieval of digital content and it also acts as a platform for e-Learning.

The Center for Continuing Education (CCE) has been functioning actively during the last few years. The institution has conducted various courses under CCE. GECI is conducting a training programme known as Special Training Empowerment Programme for Underprivileged (STEP4U) which was introduced by the Government of Kerala and aims at skill development of under privileged class for employability.

The Department associations, National Service Scheme (NSS) unit (Annexure V) and student union, have been organizing various team activities to improve the leadership skills of the students. GECI is closely associated with the District Women's Council which provides awareness programmes on teenager's problem, stress management, value education, suicide tendency etc. The Physical Education Department is very active and has been organizing athletics meet and tournaments by promoting student participation in inter collegiate and inter

university competitions. As part of the Visiting Faculty Programme (VFP), the Institution has been organizing invited talks on latest developments in science and technology from the faculties of IITs, IISc, NITs and from industries for the benefit of teachers and the students.

The GECEI is one of the remote centres of Indian Institute of Technology Bombay's outreach programme. This is an important initiative taken by IIT Bombay to work with Engineering Colleges in the country to enhance the teaching skills of faculty colleagues in core Engineering and Science subjects, under the project, "Empowerment of Students & Teachers through Synchronous & Asynchronous Instruction." This initiative is a part of the National Mission on Education through Information and Communication Technology (ICT) supported by Ministry of Human Resource and Development. Also the College is enrolled with IIT Madras under QEEE scheme, for conducting various lecture classes under ICT to B. Tech students.

### **Inauguration of Academic Blocks and Hostels**

Academic Blocks and Hostels of Government Engineering College Idukki were inaugurated on 14-09-2015 by the Honourable Chief Minister of Kerala Sri. Oommen Chandy. The meeting was presided by the PWD Minister Sri. V K Imbrahim Kunju. The meeting started with a welcome speech by Idukki MLA Sri. Roshi Augustine. Sri. V K Imbrahim Kunju, inaugurated the renovated Central Computing (CCF). Sri Joice George, MP (Idukki), Sri. M T Thomas, District Panchayat President, Sri. Shijo Thadathil, Vazhathoppe Grama Panchayat President, Prof. Vidyasagar, Joint Director (DTE) were present on the occasion.



Inauguration of Academic Blocks & Hostels by Honorable Chief Minister Sri. Oommen Chandy.



Sri. V K Ibrahim Kutty, Minister (PWD), Sri. Joice George, MP (Iduki), Sri. Roshy Augustine, MLA (Idukki)



Inauguration of CCF



Chief Minister Sri. Oommen Chandy receiving salute from the cadets

## 2<sup>nd</sup> GECI Annual National Conference (GECIAN 2015)



The 2nd GECI Annual National Conference on Technological Trends (GECIAN 2015) was held on 29th and 30th of September 2015. This year we had a total of 178 submitted papers. After the review process, a total of 107 papers were accepted for presentation and publication in the proceedings. The topics this year include items from the various engineering branches such as Information Technology, Computer Science & Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Mechanical Engineering and Civil Engineering. The conference proceedings was published in both print media as well as in CD Media with ISBN 978-93-85477-19-5.

The technical program was organized in 20 parallel sessions based on topics. In addition, we had talks on thermal engineering, signal processing, intelligent control systems, distributed and cloud computing, and cryptography.

The program review was carried out using the standard IEEE procedure with participation from outside institutes. We would like to express our deep gratitude to the reviewers and the associated editors for all of their efforts.

GECIAN 2015 was inaugurated by Dr K G Samuel, former senior Scientist, Kalpakam Atomic Research Centre and HoD (Metallurgy, AJCE, Kanjirappally).

Dr. Vinod Chandra S S, Computer Centre, University of Kerala, delivered a keynote address on “Next Generation Data Centres” during the conference. “The Role of Information Technology in India’s Economic Growth” Dr. Philip Samuel, Reader, CUSAT. Thermo Chemical Glasification of Biomass—Renewable Hydrogen Production by Dr. Sreejith C C, Prof & Head, Dept. of Mechanical Engineering, SJCE, Kottayam.



Keynote by Dr. Philip Samuel, Reader CUSAT



Key note by Dr. Vinod Chandra S S, Director, Computer Centre, Kerala University



Different Sessions - GECIAN 2015

## National Service Scheme (NSS)

- As part of 7 day special camp 2015-16, 65 NSS volunteers of GEC Idukki, offered a helping hand to Mr. Murukan Kunnumpuram of tribal settlement, Manipara, Karimban who struggled financially in constructing a house even after having a government aid. Volunteers



- worked hand in hand to transport construction materials to the elevated construction site.
- National Service Scheme unit of GEC Idukki lead the E-literacy program in March 2015 to make the people of Vazhathope Grama panchayath literate in the use of computer and internet. 300 student volunteers of GECI (including 120 NSS volunteers) visited 300 kudumbasree units in all the 14 wards of Panchayath with their laptops in this mission. Approximately 30 people participated in the programme held at each kudumbasree unit.
  - The second phase of the e-literacy was completed in the month of October 3rd, 2015 till 17th October, 2015.

**NSS Enrollment Statistics (2015-16)**

No	Particulars	SC		ST		OBC		General / Others	
		M	F	M	F	M	F	M	F
1.	No of Volunteers Enrolled in 1 <sup>st</sup> Year	1	4		2	22	24	2	5
2.	No of Volunteers Continued in NSS in 2 <sup>nd</sup> Year	1	5			30	17	3	4
<b>Total</b>		2	9		2	52	41	5	9

## **MoU with CDAC**

An MoU was signed between Government Engineering College, Idukki and Centre for Development of Advanced Computing, Thiruvananthapuram CDAC (T), a Scientific Society under the Ministry of Communications & Information Technology, Govt. of India on 21st January 2016.

## **Rank Holders**

Our M. Tech students achieved excellent results in Final year M.Tech Degree Examinations of Mahatma Gandhi University. M.Tech Network Engineering (IT) & M.Tech Systems & Engineering (CSE) got 100% results in the examinations with 13 Distinctions & 5 First classes each. M.Tech VLSI & Embedded Systems (ECE) got 7 distinctions and 9 First classes and M.Tech Power Electronics (EEE) got 5 Distinctions and 7 First classes.

## **Collaborative Project Work**

BoG approved the proposal from Dr. Sumesh Divakaran, for a collaborative research with participating institutions as IISc Bangalore, MathWorks India Pvt. Ltd, University of York, IIIT Bangalore and GEC Idukki. A sum of Rs.10.60 lakhs was allocated for the activities under this project. The first interaction was organized in May 2016.

## Sports

GEC Idukki hosted this year's M G University Inter Collegiate Table Tennis Tournament (Men and Women). Dr. P C Reghu Raj inaugurated the tournament on 15th September 2015.





## International Research Collaboration

The Department of Computer Science & Engineering has got an award of grant for a collaborative research, from Royal Academy of Engineering, London. University of York, UK; Indian Institute of Science, Bangalore, Indian Institute of Information Technology, Bangalore and MathWorks India Private Ltd. are partnering Institutions in this project.

The total project cost is Rs. 44 lakhs including the matching fund raised by the partnering Institutions. The duration of the project is 2 years from 1<sup>st</sup> March 2016.

### List of Participating Collaborators

1. Dr. Meenakshi D'Souza, Associate Professor, Department of Computer Science, International Institute of Information Technology, Bangalore.
2. Dr. Jim Woodcock FR Engg, Professor and Head, Department of Computer Science, University of York, U.K.

3. Dr. Deepak D'Souza, Department of Computer Science, Indian Institute of Science, Bangalore.
4. Dr. Sumesh Divakaran, Professor and Head, Department of Computer Science, Government Engineering College, Idukki
5. Dr. Prahladavaradan Sampath, Senior Team Lead, Mathworks India Private Limited.
6. Dr. Jeremy Jacob, Department of Computer Science, University of York, U.K.
7. Dr. Ana Cavalcanti, Department of Computer Science, University of York, U.K.
8. Dr. Sujith Kumar, Department of Computer Science, International Institute of Information Technology, Bangalore.

### **About the research proposal**

The proposed research is in the area of formal methods for embedded software. Simulink® and Stateflow® (by Mathworks) are industry-standard languages for modelling design of embedded software. Their semantics is available in open domain and they constitute an interesting class of design models for embedded software, amenable to smooth transition from continuous/discrete time design to discrete implementation.

As an area, formal methods have gained increased industry importance, especially for embedded software and hardware, where safety is of primary concern. Formal methods, when applied to design models, identify errors in early stages of development life-cycle and also guarantee full coverage.

We would like to work on refinement-based verification and symbolic testing and verification of Stateflow and Simulink models. These formal methods techniques will guarantee correctness of design models arrived through iterative design process and hence, correctness of the code of embedded software too.

Working on problems in formal methods will expose our students to focus their research on mathematically challenging problems that have industry relevance. Methodologies for verification and validation of industrial embedded software models can be immediately prototyped and illustrated with real-life examples from Mathworks.

### **How GEC Idukki can benefit from this project?**

This project is giving the first opportunity for GEC Idukki to become a partner in an International Research Collaboration. There are various benefits that GEC Idukki can derive from this project.

Firstly the proposal includes a provision for taking a full-time PhD student advised by faculty members from IITB, IISc and GEC, Idukki. Thus faculty of GEC Idukki get an opportunity to guide Ph. Ds jointly with advisors from University of York, IISc, IITB and Mathworks. Secondly it is proposed to allow post-graduate students from GEC Idukki to work in this project and do internship at IISc, IIT Bangalore or Mathworks. Thirdly the project may help GEC

Idukki to improve its research outcome through research publications obtained through the project.

The first workshop of the project was conducted at GEC Idukki from 19<sup>th</sup> May 2016 to 21<sup>st</sup> May 2016. Investigators from University of York, Indian Institute of Science, IIT Bangalore and Mathworks India participated in the workshop.

The workshop mainly focused on related works in the literature. Papers were presented and discussed in the workshop.





The first workshop at GEC Idukki


## Project Workshop @ University of York scheduled to be conducted in October 2016

The next workshop is scheduled to be conducted at University of York in October 2016. The agenda of this workshop is to decide the roadmap for future works in the project.

## Placement Statistics 2015 -16

	DETAILS OF STUDENTS PLACED			OFFERED SALARY (LPA)
	Sl No	Name of Student	Branch	
<b>Qburst</b>  	1	ANITA JOSE	IT	3.30
	2	ARUN SHAJI	CSE	3.30
	3	JOJI JOSEPH	ECE	3.30
	4	NAVIN RAHIM HAMEED RAWTHER	CSE	3.30
	5	SURYAPRASAD OS	CSE	3.30
<b>Infosys</b>   POWERED BY INTELLECT DRIVEN BY VALUES	6	ANITA JOSE	IT	3.25
	7	NAVIN RAHIM H RAWTHER	CSE	3.25
	8	MOHAMMED ASHARAF M	CSE	3.25
	9	AISWARYA S HARI	CSE	3.25
	10	SANDEEP S	CSE	3.25
	11	FEMI K A	ECE	3.25
	12	ANANYA M P	ECE	3.25
	13	ANANDKRISHNAN V S	ECE	3.25
<b>Mphasis</b> 	14	SRUTHI K CHANDRAN	CSE	2.50
<b>UST Global</b>  	15	AJILAL M A	CSE	3.00
	16	MALAVIKA S KUMAR	CSE	3.00
	17	SHIFA P H	CSE	3.00
	18	ANJUMOL M S	CSE	3.00
	19	SHABNA C H	EEE	3.00
	20	FAISAL M V	EEE	3.00
	21	SAMBHU MOHAN	ECE	3.00
	22	SREENATH M	ECE	3.00
	23	NEETHU C K	ECE	3.00
	24	ALEENA BOBAN	ECE	3.00
	25	ANOOP KUMAR K V	ECE	3.00
	26	ARAVIND V P	ECE	3.00
	27	MEHNAZ SHUJAH VYSIATH	IT	3.00
<b>Wipro</b>	28	ANITA JOSE	IT	3.25
	29	SURYAPRASAD OS	CSE	3.25

	30	SUHANA K SUBAIR	CSE	3.25
	31	SHABNA H	EEE	3.25
	32	SREENATH M	ECE	3.25
	33	ASHALAKSHMI V A	CSE	3.25
	34	SAMBHU MOHAN	ECE	3.25
	35	ANOOP KUMARKV	ECE	3.25
	36	RESHMA RAMAKRISHNAN	CSE	3.25
	37	FEMI K A	ECE	3.25
<b>IBS</b> 	38	SOUMYA A S	CSE	3.00
	39	RESHMA RAMAKRISHNAN	CSE	3.00
	40	ALEENA LAWARANACE O L	IT	3.00
	41	KARTHIKA P	EEE	3.00
<b>VVDN</b> 	42	ARAVIND V P	ECE	3.00
<b>SixDee Technologies</b> 	43	NIPUN U V	CSE	2.50
	44	ATHIRA PRADEEP	ECE	2.50
	45	MOHAMMED RIYAS	CSE	2.50
	46	SUMESH M	ECE	2.50
	47	ASIF A	CSE	2.50
<b>MindTree</b>  Mindtree	48	SANDEEP N S	CSE	3.25
<b>Unisis Solutions</b> 	49	GREESHMA K R	CSE	1.50
	50	ANJU SURENDRAN	ECE	1.50
	51	DHANALAKSHMI RENGANATHAN	ECE	1.50
<b>Speridian Technologies</b>	52	JEFFRIN JOSE	ECE	2.50
	53	ATHUL SURESH	IT	2.50
<b>Inoltro Technologies</b> 	54	MOHAMMED RIYAS	CSE	1.50
	55	SHIMNA N S	IT	1.50
	56	AISWARYA RAJ	EEE	1.50
	57	ARSHWIN DENU EV LAL PM (Internship)	CSE	1.50
	58	RESHMA RAJAN (Internship)	IT	1.50
<b>TCS</b> 	59	ANOOP KUMAR K V	ECE	3.25
	60	KARTHIKA P	EEE	3.25
	61	RESHMA RAMAKRISHNAN	CSE	3.25
	62	SRUTHY E S	CSE	3.25
<b>Smacon Technologies</b>	63	ATHIRA A S	IT	1.50
<b>MobTecnica Consultancy Pvt. Ltd</b>	64	ATHIRA K S	CSE	1.50
	65	ARSHWIN DENU EV LAL PM	CSE	1.50

	66	VISAKH V	CSE	1.50
	67	SHALU MARIAM SHEJI	IT	1.50



## Department of Computer Science and Engineering

### Introduction

Department of CSE started functioning in the year of 2000. The department has a highly committed faculty which is keen on encouraging students to involve in various co-curricular and extra-curricular activities along with their academics. Also the department has a highly advanced infrastructure including high speed internet facilities, class rooms equipped with LCD projectors and interactive boards and well equipped software and hardware labs. It organizes, on a regular basis, supplementary program for students which include paper presentations, technical seminar and quizzes. It also conducts short-term training program for both the staff and students for updating them with the latest technological trends. In the previous academic year department has conducted various faculty development programme, and various training programmes for the students by experts from various institutions including premier institutions like IISc.

### 1. Infrastructure Development

Department is extending its building by constructing the third floor for class rooms and for other enhanced requirements, this is under construction.

### 2. Academic activities

#### Training Programmes Conducted for Faculty/Staff

Sl No	Course Name	Date & Duration	Resource Person's Name
1	FDP on Algorithms & Complexity	28/12/2015 – 31/12/2015 (4 days)	Dr. Muralikrishnan K, NIT Calicut & Dr. Jasin Babu, IIT Palakkad
2	FDP on Data Mining & Text Mining (With IT Department)	4/1/2016 – 8/1/2016	Dr. Krishnakumar, Amirta University, Mrs. Lija Mohan, CUSAT

## Programmes Conducted for Students

SI No	Course Name	Date & Duration	Resource Person's Name
1	Soft Skill Development	15/12/2015 – 17/12/2015	Mr. Chandrashekhar CareerFit 360 Cochin
2	Employability Skills Training	14/1/2016 – 16/1/2016	Mr. Chandrashekhar CareerFit 360 Pvt. Ltd. Cochin
3	Entrepreneurship	19/9/2015 (1 day)	Sreethar Krishnaswamy Chairman & MD SP Technologies Chennai
4	Training on Web Application Development,	13/2/2016 – 6/3/2016 (12 days)	Winwous Technologies, Cochin
5	Theatre training	18/3/2016 – 20/3/2016 (3 days)	Priyan Raju CareerFit 360 Cochin

### Training Programmes attended by M Tech students:

The Department of Computer Science & Engineering conducted a Four-day **Theatre Training Programme** for 2<sup>nd</sup> and 4<sup>th</sup> semester M.Tech students of the department. The training was provided by CareerFit 360 Pvt Ltd, Cochin from 17/03/2016 to 20/03/2016. The Theatre training Program was an immersive experience, designed to inspire the candidates. The programme also included various group discussions and sessions on Interview handling Techniques.

Also students attended various other training programmes conducted by other institutions. First year M Tech students of CSE Department attended **Workshop on “Cloud Computing”** at Saint Gits College of Engineering, Kottayam on 03/11/2015 and 04/11/2015, which was very useful for the Distributed Systems & Advanced Computing Lab of M1.

First year M.Tech students also attended **Symposia on Intelligent Information Systems & Networks** on 21/01/2016 and 22/01/2016, organized by the IT Department of GEC Idukki. Also they attended a workshop on **Hadoop** organized by IT Department of GEC Idukki.

Sl. No	Name of the Programme	Date	Resource Person/Conducted Organization
1	Workshop on "Cloud Computing" at Saint Gits College of Engineering Kottayam	3/11/2015 to 4/11/2015	IFC3 & Neuromancers IIT Bhubaneswar
2	Faculty Development Programme on the Topic Algorithms and Complexity	28/12/2015 to 31/11/2015	Dr.Muralikrishnan (NIT Calicut), Dr.Jasin Babu (IIT Palakkad)
3	Symposia on Intelligent Information Systems and Networks	21/1/2016 to 22/1/2016	Guest: Dr.Shobhana (RIT Kottayam)
4	Theatre Training Programme	17/3/2016 to 19/3/2016	Indu Jayaram, Priyaraj G, R. Chandrasekharan
5	Workshop on Hadoop	4/4/2016 to 8/4/2016	Harikrishnan(Rajagiri School of Engineering)

### Visiting Faculty Programmes

Sl No	Resource Person's Name & Designation, Official Address	Date & Duration	To whom
1	Dr. Mathew C Francis Assistant Professor ISI, Chennai	28/6/2015 – 29/6/2015 (2 days)	M.Tech
2	Dr. Dilip Mathew Thomas	10/8/2015 – 19/8/2015 (10 days)	S8 CSE
3	Biju Paul Kitek technologies pvt. Ltd. Mumbai	30/10/2015 (1 day)	S6 CSE
4	Dr. Dilip Mathew Thomas	28/12/2015 – 1/1/2016 (5 days)	S8 CSE
5	Dr. Minate De IISC Banglore	31/12/2015 (1 day)	M.Tech
6	Nikhil Nambiar SPACE Kerala	18/3/2016 – 20/3/2016 (3 day)	Girls of GECE

## Training Programmes Attended

Faculty/Staff Name	Title of the Programme	Organizing Institution	Date & Duration of the Programme
Mumthas O Y	Research Methodology	Department of ME, GEC Idukki	22/06/2015-26/06/2015 (5 days)
	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)
	Research directions in data and text mining.	Department of CSE & IT	4/1/2016-8/1/2016(5 days)
Savyan P V	Recent Trends in Cryptography	Department of IT	November 11-14, 2015 (4 days)
	Faculty Development Programme	Teaching Learning Centre IIT Madras	November 16-18, 2015 (3 days)
	Finite Element Analysis	Department of Mechanical Engg, GECI	November 23-27, 2015 (5 days)
	Symposia on Intelligent Information Systems & Networks	Department of IT, GECI	January 21-22, 2016 (2 days)
Shameela Sulaiman	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)
	Research directions in data and text mining.	Department of CSE & IT	4/1/2016-8/1/2016 (5 days)
	Faculty Development Programme	Teaching Learning Centre IIT Madras	25/2/2016-27/2/2016 (3 days)
Geethu Prakasan	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)
	Research directions in data and text mining.	Department of CSE & IT	4/1/2016-8/1/2016 (5 days)
	Faculty Development Programme	Teaching Learning Centre IIT Madras	11/2/2016-13/2/2016 (3 days)
Jabin Mathew	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)
	Research directions in data and text mining.	Department of CSE & IT	4/1/2016-8/1/2016 (5 days)
	Faculty Development Programme	Teaching Learning Centre IIT Madras	11/2/2016-13/2/2016 (3 days)
Ranjini Ram	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)

	Research directions in data and text mining.	Department of CSE & IT	4/1/2016-8/1/2016 (5 days)
	Faculty Development Programme	Teaching Learning Centre IIT Madras	11/2/2016-13/2/2016 (3 days)
	Advanced Computer Architecture	Barton Hill, Trivandrum	25/2/2016 - 2/3/2016 (5 days)
Anju Sukumar	Faculty Development Programme	Teaching Learning Centre IIT Madras	25/2/2016-27/2/2016 (3 days)
Aswany Shaji	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)
	Research directions in data and text mining.	Department of CSE & IT	4/1/2016-8/1/2016 (5 days)
	Faculty Development Programme	Teaching Learning Centre IIT Madras	25/2/2016-27/2/2016 (3 days)
Josmy T Jose	Algorithms and Complexity	Department of CSE, GEC Idukki	28/12/2015-31/12/2015 (4 days)

### **Extension Talks/Conferences chaired outside**

1. Dr P.C. Reghu Raj: Invitation to Computational Linguistics in the T Faculty Development Program on Machine Learning and Natural Language Processing, TKM CE, Kollam, Jan 6, 2016.

### **3. Achievements**

#### **Faculty**

- Mr.. Sumesh Divakaran, Prof. (CSE) was awarded Ph.D for this thesis entitled “A Refinement-Based Methodology for Verifying Abstract Data Type Implementations” from Department of CSE, IISc. Bangalore
- Mrs. Mumhas OY Completed masters’ programme in CSE from PSG Tech, Coimbatore
- Mrs. Bisna ND Completed Masters’ programme in CSE from PSG Tech, Coimbatore
- Mr. Anilkumar S Completed Masters’ programme in CSE with Gold Medal from NIT Calicut

## Students

### University Rank Holders

Rank No	Student Name	B.Tech/M.Tech
1	Akhila B Nair ( CGPA - 9.28)	M.Tech
2	Rahul U (CGPA - 9.03)	M.Tech
3	Privija Raj (CGPA - 8.89)	M.Tech

## GATE Qualification

Student Name	GATE Score
Navin Rahim Hameed	37.00
Nanda P Sadasivan	25.70
Muhammed Afsal K K	25.00
Asif A	23.20

## 4. Result Analysis

### S7 CSE

Over all Pass % = 79.1%

Subject	Pass %
701 Web Technology	95.5
702 Compiler Construction	95.4
703 Computer Graphics	98.4
704 Object Oriented Modeling & Design	96.9
705 Principles of Programming Languages	100.0
706 Digital Image Processing/Data Mining & Data Ware Housing	96.6
707 System Programming Lab	93.8
708 Networking Lab	100.0
709 Seminar	100.0
710 Project	100.0

**S5 CSE**

Overall pass % = 51.1%

<b>Subject</b>	<b>Pass %</b>
EN 010 501 Principles Of Management	93
EN 010 502 Engineering Mathematics Iv	93
CS 010 503 Data Base Management Systems	78.6
CS 010 504 Digital Signal Processing	65
CS 010 505 Operating Systems	82.5
CS 010 506 Advanced Microprocessors And Peripherals	71.1
CS 010 407 Data Base Lab	93
CS 010 508 Hardware And Microprocessors Lab	87.8

**S1 & S2 CSE**

Overall Pass % 51.7

<b>Subject</b>	<b>Pass %</b>
MA101 CALCULUS	70
CY100 ENGINEERING CHEMISTRY	85
BE100 ENGINEERING MECHANICS	84.7
BE10105 INTRODUCTION TO COMPUTING AND PROBLEM SOLVING	73.3
BE103 INTRODUCTION TO SUSTAINABLE ENGINEERING	96.6
EE100 BASICS OF ELECTRICAL ENGINEERING	74.6
CY110 ENGINEERING CHEMISTRY LAB	100
CS110 COMPUTER SCIENCE WORKSHOP	100
EE110 ELECTRICAL ENGINEERING WORKSHOP	100

## Department of Information Technology

### 1. Introduction

Department of Information Technology at Government Engineering College, Idukki was established in the academic year 2000. The faculties of our department are well qualified and have rich knowledge in their subjects. Highly committed faculty members are keen on encouraging students to involve in various co-curricular and extra-curricular activities along with their academics. Also the department has a highly advanced infrastructure including high speed internet facilities, class rooms equipped with LCD projectors and digital podiums. The department labs are equipped with state of art of learning tools, advanced computing infrastructure with world class software environment and development tools which satisfy the bench mark in high end IT education. It also conducts short-term training program for both the staff and students for updating them with the latest technological trends.

### 2. Academic activities

#### Training Programmes Conducted for Faculty/Staff

SI No	Course Name	Date & Duration	Resource Person's Name
1.	STTP on Recent trends in Cryptography (Coordinator: Dr. Sangeetha Jose)	11-14, November 2015	Preetha, Mathew K, Sangeetha Jose, Dr Varghese Paul, Sunilkumar
2	FDP on Research Directions in Data and Text Mining [Combined with CSE Dept] (Coordinator : Prof. K R Remesh Babu, Prof. Philumon Joseph)	4-8 January 2016	Dr. Krishnakumar, Amirta University, Mrs. Lija Mohan, CUSAT, & TCS
3	FDP on Internet of Things (Coordinator: Prof. K R Remesh Babu, Dr. Sangeetha Jose)	4-8 April, 2016	Dr. Vaskar Raychoudhury, IIT Roorke, Mr. Sahim Baker, IEEE, Prof. Binu A, RSET

#### Programmes Conducted for Students

SI No	Course Name	Date & Duration	Resource Person's Name
1.	PHP Training	15 <sup>th</sup> & 16 <sup>th</sup> of February	Mohankumar Director R&D GreyTechno Labs
2	Coding Theory	14-02-2016	Dr. Preetha Mathew K



## Symposia on Intelligent Information Systems (iiSN 2016)

The Research Symposium on Intelligent Information Systems & Networks (iiSN 2016) was an initiative of Department of Information Technology, Government Engineering College, Idukki to encourage the scholars to showcase the core details and highlights of their research initiatives to the academic and industrial communities. This event revealed the emerging trends in technology and pointed out the future requirements and possibilities. Dr. Asok Kumar, N, Principal-in-charge inaugurated the symposium. Dr. Varghese Paul, Reader, CUSAT & Senior Research Advisor (GECI) delivered a keynoted address on “Intelligent Systems” during the symposium. Another keynote address was on “Internet of Things” by Mr. Shahim Baker, Vice Chair, IEEE Kochi Sub section.

There were 42 papers received out of which 26 papers were accepted for presentation after the review. The accepted papers were scheduled in three sessions. 91 participants actively participated in the research article presentations and in the keynote addresses. Dr. Varghese Paul, SRA & Reader (CUSAT) delivered a talk on “Intelligent Information Systems” on the 1st day of the symposium. Another keynote was on the topic “Internet of Things (IoT)” by Mr. Shahim Baker, Vice Chair, IEEE Kochi sub section. Prof. K. R. Remesh Babu was the organizing chair for the symposium. Dr. Sangeetha Jose was the organizing secretary and Prof. Ratheesh T.K. was the organizing convener. Faculty members of IT department and the IEEE student chapter members were actively participated in coordinating various sessions of the symposium.

The conference was financially sponsored by TEQIP Phase II and technically sponsored by IEEE Kochi section.



Inauguration & Releasing of Proceedings



Felicitation by Dr. David Solomon George & Dr. Santhokumar S



Keynote by Mr. Shahim Baker, IEEE



With Session chairs



iisN 2016 Participants

## Details of Papers presented in Symposia

Sl No.	Paper Title/Author
1	A Review on Image Retrieval Techniques <i>Meharban M S, Dr. Priya S</i>
2	Analysis of Composite Image Identification Techniques <i>Meetu Mariam Anuja, Krishnalal G</i>
3	Copy Move Forgery Detection <i>Reshma Raj, Krishnalal G</i>
4	An Implementation of Lexicographic Breadth First Search to Recognize and Optimally Color Chordal Graphs <i>Athulya T Vaidhyan, Lekshmi M Mohan</i>
5	Object Based Extraction and Change Detection Of Water Bodies Using High Resolution Remote Sensed Data And GIS <i>Pravija Raj P V</i>
6	On the Bend Number of Split Graphs as VPG <i>Athira N S, Anjana C S</i>

- 7 A Framework Based On Metacrawler For Information And Image  
Discovery  
*Sandra Salin, K R Remesh Babu*
- 8 Advanced Cache Techniques for SLA-Driven Multi-Tenant Application on  
PaaS  
*Saranya S, K R Remesh Babu*
- 9 An Energy Efficient Path Selection for WSN with Multiple Mobile Sinks  
*Sareena Hassan, K R Remesh Babu*
- 10 An Enhanced Protocol For Secure Communications In Spontaneous  
Wireless Ad Hoc Networks  
*Ajith Raj Menon, Ratheesh T K*
- 11 Secured “LIN” protocol for Low Power And Lossy SRD Networks  
*Nisreen M Ali, K R Remesh Babu*
- 12 Auto-scaling Model for Cloud Computing services  
*Charles P S, K R Remesh Babu*
- 13 Cluster Oriented Sensor Search in User Preferred Context Awareness  
Model on Internet of Things  
*Neethu M R, Vigil Kumar V V, K R Remesh Babu*
- 14 InquestNet: Integrated Testing Environment for Protocol Inquesting  
Muhsina Hassan, K R Remesh Babu
- 15 QoS based autonomic brokerage service in cloud computing  
*Hashmi K H, K R Remesh Babu*
- 16 Analysis Of SLA-Aware Cloud Computing In Federated Environment  
*Sruthi K K, K R Remesh Babu*
- 17 Sender and Receiver Initiated Algorithm: Dynamic approach for  
Monitoring Load in Cloud Environment  
*Divya P V, K R Remesh Babu*
- 18 Simple Light Weight Encryption - The Combination of GRP with SEA and  
Network Coding  
*Sahana K I, Dr. Sangeetha Jose*
- 19 SLA Aware Load Balancing of Tasks in Cloud Computing Environments  
*Amaya Anna Joy, K R Remesh Babu*
- 20 Software Defined Networking for Cloud Computing  
*Ammu Joseph, K R Remesh Babu*
- 21 Test adequacy assessment of Safety critical software- using Mutation testing  
*Merin Susan Jacob, Deeja Sunder*
- 22 Application Aware Wireless Sensor Networks: Issues and Challenges

*Vivek P, Dr. Sangeetha Jose*

23 Automatic Malayalam News Text Categorization

*Varsha P Suresh*

24 Geological Information Retrieval

*Dr. Sobhana N V*

25 Text Analysis and Information Retrieval: A Review

*Dr. Sobhana N V*

Tweet Segmentation And its Application to Named Entity Recognition – A  
Critical

26 Literature Review

*Swathy K Shaji, Dr. Sobhana N V*



FDP on Recent Trends in Cryptography



FDP on Internet of Things – Dr.Vaskar Raychoudhury



FDP on Internet of Things – Prof. Binu A



PHP Training Program for students

### Training Programmes Attended by Faculty/Staff

Faculty/Staff Name	Title of the Programme	Organizing Institution	Date & Duration of the Programme
Vigilkumar V V	Advanced Data analysis for Management	IIT Delhi	14-18, December 2015
Sangeetha Jose	Advanced Data analysis for Management	IIT Delhi	14-18, December 2015
Asha Ali	Advanced Data analysis	IIT Delhi	14-18, December



	for Management		2015
Ratheesh T K	Advanced Data analysis for Management	IIT Delhi	14-18, December 2015
Dhanya C K	Advanced Data analysis for Management	IIT Delhi	14-18, December 2015
Praveen A N	STTP on Total Station Surveying and Advanced Surveying Techniques	GEC Idukki	27-29, January 2016
Asha Ali	FDP on Research Directions in Data and Text Mining	GEC Idukki	4-8, January 2016
Sangeetha Jose	FDP on Research Directions in Data and Text Mining	GEC Idukki	4-8, January 2016
Jithi PV	FDP on Research Directions in Data and Text Mining	GEC Idukki	4-8, January 2016
Dhanya C K	FDP on Research Directions in Data and Text Mining	GEC Idukki	4-8, January 2016
Dhanya C K	One week short course on Python Programming	Indian Institute of Information Technology and Management, Thiruvananthapuram	22-26 February 2016
Asha Ali	Nature Inspired Computing for Engineering Applications	Centre for Continuing Education Indian Institute of Science Bangalore	6-8 April 2015
Dhanya C K	Effective Teaching and Learning Methods	College of Engineering Thiruvananthapuram	8-12 June 2015
Jithi PV	Algorithms and Complexity	GEC Idukki	28- 31 December 2015
Dhanya C K	Pedagogy Training	IIT Madras	26-28 February 2015
Rejin R	STTP on Finite Element Analysis	GEC Idukki	23-27 November 2015
Asha Ali	FDP	IIT Madras	8-10 October 2015
Asha Ali	STTP on Finite Element Analysis	GEC Idukki	23-27 November 2015
Sangeetha Jose	Communication Skill Development	CET School of Management College of Engg Thiruvananthapuram	9-13 March 2015

Micky James	Technical Writing in Latex	GEC Idukki	9-12 December 2015
Surya Rani Sunny	Algorithms and Complexity	GEC Idukki	28-31 December 2015
Geethu K Mohan	Algorithms and Complexity	GEC Idukki	28-31 December 2015
Praveen A N	3 Day Workshop on Outcome based education and NBA Accreditation	College of Engg Kidangoor	10-12 December 2015
Praveen A N	STTP on Finite Element Analysis	GEC Idukki	23-27 November 2015
Dhanya C K	Technical Writing in Latex	GEC Idukki	9-12 December 2015
Sangeetha Jose	Technical Writing in Latex	GEC Idukki	9-12 December 2015
Dhanya C K	STTP on Finite Element Analysis	GEC Idukki	23-27 November 2015
Sangeetha Jose	STTP on Finite Element Analysis	GEC Idukki	23-27 November 2015
Sangeetha Jose	Short Term course on Advanced data analysis on Management	IIT Delhi	14-18 December 2015
Sangeetha Jose	STTP on Research Methodology	GEC Idukki	22-26 June 2015
Sangeetha Jose	One week Inter Disciplinary Short Term Course	IIT Himachal Pradesh	30 <sup>th</sup> June – 4 <sup>th</sup> July 2015
Asha Ali	Algorithms and Complexity	GEC Idukki	28-31 December 2015
Asha Ali	Technical Writing in Latex	GEC Idukki	9-12 December 2015
Dhanya C K	Algorithms and Complexity	GEC Idukki	28-31 December 2015
Rakhi K Raj	STTP on Research Methodology	GEC Idukki	22-26 June 2015
Rejin R	Algorithms and Complexity	GEC Idukki	28-31 December 2015
Ratheesh T K	Total Station Surveying and Advanced Surveying Techniques	GEC Idukki	27-29 January 2015
Ratheesh T K	Algorithms and Complexity	GEC Idukki	28-31 December 2015
Ratheesh T K	STTP on Finite Element Analysis	GEC Idukki	23-27 November 2015
Ratheesh T K	Pedagogy Training	IIT Madras	19-21 March 2015

Geethu K Mohan	Pedagogy Training	IIT Madras	10-12 March 2016
Jithi P V	Pedagogy Training	IIT Madras	10-12 March 2016

### Extension Talks/Conference chaired outside college

Faculty Name	Title of the Talk	Institution Name
Sangeetha Jose	Design of signature schemes	TKM College of Engineering Kollam
Sangeetha Jose	4 <sup>th</sup> National Conference on Emerging Technologies	GEC Barton Hill, Tvm
Sangeetha Jose	Challenges in Security	GPTC Muttom
Sangeetha Jose	Expert session on Recent Trends in Security	CoE, Kidangoor

## 3. Achievements

### Faculty

- Ms. Sangeetha Jose, AP (IT) obtained Ph.D for her thesis entitled “Variants of Blind Signatures in Provable Secure Manner” from the Department of CSE, IIT Madras.

### Students

- Ms. Roshily Roy, S4 (IT) won 2nd price in the event taekwondo (women), in Mahatma Gandhi University intercollegiate sports meet on February 2016.

### University Rank Holders

Rank No	Student Name	B.Tech/M.Tech
1	Amaya Anna Joy	M.Tech
2	Suja G J	M.Tech
3	Muhsina Hassan	M.Tech

### GATE Qualification

Student Name	GATE Score
Mohamed Ali P	463
Parvathy	386

## 4. Result Analysis

### Result Analysis S8 IT (2011 Admission)

<b>No of Pass</b>	<b>54</b>			
<b>Pass %</b>	<b>83</b>			
<b>Total Students</b>	<b>65</b>			
SUBJECTS		No. Of fail	No Of Passs	Pass %
A	Wireless Communication	5	60	92
B	Cryptography and Network Security	4	61	94
C	Artificial Intelligence	2	63	97
D	High Speed Networks	6	59	91
E	Ad Hoc and Sensor Networks	2	63	97
F	Web Application Lab	1	64	98
G	Project	0	65	100
H	Viva Voce	0	65	100

### Result Analysis S7 IT (2012 Admission)

Total students	<b>50</b>			
No of Pass	<b>24</b>			
Pass %	<b>48.00</b>			
Subjects		Fail	pass	Pass %
A	Financial Managemnet And E-Banking	11	39	78
B	Object Oriented Modelling And Design	13	37	74
C	Computer Graphics And Multimedia	8	42	84
D	Internetworking	19	31	62
E	Web Application Development	19	31	62
F	Data Mining An Datawarehousing	18	32	64
G	Internetworking Lab	4	46	92
H	Computer Aided Software Engineerng Lab	5	45	90
I	Seminar	0	50	100
J	Project	0	50	100

**Result Analysis S6 IT (2012 Admission)**

Total students	<b>50</b>			
No of Pass	<b>17</b>			
Pass %	<b>34.00</b>			
<b>Subjects</b>		<b>Fail</b>	<b>pass</b>	<b>Pass %</b>
A	Computer Networks	15	35	70
B	Digital Signal Processing	9	41	82
C	Information Theory And Coding	7	43	86
D	Software Engineering	16	34	68
E	Design And Analysis Of Algorithms	13	37	74
F	Unix Shell Programming	29	21	42
G	Network Programming Lab	16	34	68
H	Mini Project	2	48	96

**Result Analysis S5 IT (2013 Admission)**

TOTAL STUDENTS	25			
No of Pass	11			
Pass %	44.00			
	<b>Subjects</b>	<b>No of Fail</b>	<b>No of Pass</b>	<b>Pass %</b>
A	Engineering Mathematics Iv	4	21	84
B	Microprocessors & Microcontrollers	11	14	56
C	Data Communication	2	23	92
D	Operating Systems	6	19	76
E	Language Translators	4	21	84
F	Database Management Systems	8	17	68
G	Pc Hardware & Microprocessor Lab	5	20	80
H	Systems Lab	2	23	92

**Result Analysis S4 IT (2013 Admission)**

Total Students	26			
No of Pass	9			
Pass %	34.62			
	SUBJECTS	No of Fail	No of Pass	Pass %
A	Engineering Mathematics III	15	11	42.31
B	Principles of Management	3	23	88.46
C	Computer Organisation and Architecture	5	21	80.77
D	Theory Of Computation	10	16	61.54
E	Data Structure and Algorithm	4	22	84.62
F	Object Oriented Techniques	5	21	80.77
G	Logic Design lab	4	22	84.62
H	Data Structure and Programming Lab	4	22	84.62

**Result Analysis S3 IT (2014 Admission)**

<b>Pass%</b>	<b>66.66666667</b>	Total no of Students: 33				
	SUBJECTS	Fail	Absent	Present	Pass	Pass%
1	Engineering Mathematics II	0	0	33	33	100
2	Economics & Communication Skills	1	0	33	32	97
3	Discrete & Integrated Electronic Circuits	5	0	33	28	85
4	Switching Theory & Logic Design	8	1	32	24	73
5	Principles Of Communication Engineering	5	1	32	27	82
6	Problem Solving & Computer Programming	7	0	33	26	79
7	Electronic Circuits & Communication Lab	0	2	31	31	94
8	Programming Lab	2	5	28	26	79

**Result Analysis S1S2 IT (2014 Admission)**

No of Pass	12					
<b>Pass %</b>	<b>41</b>					
Total No of Students	29			No of Fail		Pass %
Engineering Mathematics I				3	26	89.7
Engineering Physics				1	28	96.6
Engineering Chemistry & Environmental Studies				2	27	93.1
Engineering Mechanics				13	16	55.2
Engineering Graphics				5	24	82.8
Basic Civil Engineering				0	29	100
Basic Mechanical Engineering				10	19	65.5
Basic Electrical Engineering				5	24	82.8
Basic Electronics Engineering and Information Technology				8	21	72.4
Mechanical Workshop				0	29	100
Electrical and Civil Workshops				0	29	100

**Result Analysis S1 IT (2015 Admission)**

Total students	60			
No of Pass	7			
Pass %	12			
<b>Subject Code</b>	<b>Subject</b>	<b>Fail</b>	<b>Pass</b>	<b>Pass %</b>
BE10105	Introduction To Computing And Problem Solving	47	13	21.67
BE100	Engineering Mechanics	22	38	63.33
CY100	Engineering Chemistry	26	34	56.67
MA101	Calculus	38	22	36.67
CS110	Computer Science Workshop	0	60	100
EC110	Electronics Engineering Workshop	0	60	100
CY110	Engineering Chemistry Lab	0	60	100
EC100	Basics Of Electronics Engineering	40	20	33.33
BE103	Introduction To Sustainable Engineering	5	55	91.67

## 5. Publications

Sl. No.	Authors	Title of the Article	Name of Journal/Conference (with date/place held) Mention Int./National	Vol. No. /Issue No./Page No.
1	K R Remesh Babu, Saranya S, Philip Samuel	Advanced Cache Techniques for SLA-Driven Multi-Tenant Application on PaaS	International Journal of Computer Information Systems and Industrial Management Applications,	Vol. 8 (2016) pp. 266-274
2	Sangeetha Jose	A study of key management schemes in dynamic wireless sensor networks	ICRTCCS'16, International Institute of Information Technology, Pune, 8-9 <sup>th</sup> January 2016	
3	K R Remesh Babu, Philip Samuel	Enhanced Bee Colony Algorithm for Efficient Load Balancing and Scheduling in Cloud	Advances in Intelligent Systems and Computing, Springer Verlag	Vol. 424, pp. 67-78
4	K R Remesh Babu, Saranya S, Philip Samuel	Secure Cloud Multi-tenant Applications with Cache in PaaS	Advances in Intelligent Systems and Computing, Springer Verlag	Vol. 424, pp. 15-27
5	K R Remesh Babu, Amaya Anna Joy, Philip Samuel	Load Balancing Of Tasks In Cloud Computing Environment Based On Bee Colony Algorithm	IEEE 5th International Conference on Advances in Computing and Communications (ICACC-2015), 2 - 4 September 2015	pp. 89 - 93.
6	Suja G J, Sangeetha Jose, K R Remesh Babu, Philip Samuel	Performance Analysis Of Big Data Gathering in Wireless Sensor Network Using An EM Based Clustering Scheme	IEEE 5th International Conference on Advances in Computing and Communications (ICACC-2015), 2 - 4 September 2015	pp. 109 – 113
7	K R Remesh Babu, Philip Samuel	Concept Networks for Personalized Web Search Using Genetic Algorithm	Elsevier Procedia Computer Science 45 (2015)	pp. 566 – 573
8	Sheba Jiju George, K R Remesh Babu	Anywhere at Anytime Internet: Google Loon Balloons	Journal of Network and Information Security, Vol. 3, Issue. 1, June 2015.	pp. 14-22
9	Lincy M George, K R Remesh Babu	A Virtualisation Approach to Software	International Conference on Recent	pp. 60-65



		Defined Networks	Advancements and Challenges in Engineering	
10	Neethu M R	A Study on the Security Aspects of Internet of Things	International Conference on Recent Advancements and Challenges in Engineering	pp. 21-24,
11	Ajith Raj Menon A, Ratheesh T K	A Novel Approach For Reliable File Communication In Spontaneous Wireless Ad Hoc Networks	IEEE sponsored Online International Conference on Green Engineering and Technology (IC-GET 2015), November 2015	
12	Lijo George, Ratheesh T K	PhishHook: An efficient approach to phishing detection	IEEE sponsored Online International Conference on Green Engineering and Technology (IC-GET 2015), November 2015	

**In Proceedings of GECI Annual National Conference on Technological Trends 2015, September 27-29, 2015.**

**M. Tech Students**

1. Antu Raj S and Sangeetha Jose, "Study on Cognitive Wireless Mesh Networks for Emergency and Public Safety Situations", pp. 25 – 29.
2. Sheba Jiju George and K R Remesh Babu, "Smartening Kerala: An Architecture Model", pp. 30-33.
3. Babitha M P and K.R. Remesh Babu, "A Survey on QoS Monitoring and Management in Cloud Computing Environment", pp. 34 – 37.
4. Sruthi S V and K.R. Remesh Babu, "Analysis of Existing Trends in Web Search Personalization and the Introduction of a Non-user Profile Related Technique", pp. 38-41.
5. Babitha M P and K.R. Remesh Babu, "Load Balancing in Energy Efficient Mobile Web", pp. 42-46.
6. Ramisha P and Remesh Babu K R, "Web Search with Secured User Profile", pp. 47-50.
7. Jincy Joseph and K R Remesh Babu, "Review on Different Scheduling Techniques to Improve Communication Performance between Co-located Virtual Machines", pp.51-53.
8. Reshma M and K R Remesh Babu, "A Survey- Based on QADR Problem", pp.54-57.
9. Saranya M S and Asha Ali, "Verse: Vehicular Engineering Proximity Social Network", pp.58-61.
10. Anija V S and K R Remesh Babu, "Decreasing Impacts of SLA Violation - A Comparative Study", pp. 62-65.

11. Vanikrishna K and Vigil Kumar V V, "Energy Efficiency in Data Center Networks", pp. 66-71.
12. Neethu B and K R Remesh Babu, "Combinatorial Auction Based Dynamic VM Provisioning in Private Cloud", pp.72-78.
13. Sruthi K K and K R Remesh Babu, "Performance Evaluation of Job Scheduling Algorithms in Cloud Computing", pp.79-83.
14. Parvathy Babu and K R Remesh Babu, "A Model for Reducing the Latency in Competition and Cooperation among Cloud Providers", pp.84-88.
15. Amaya Anna Joy and K R Remesh Babu, "Study of Load Balancing Algorithms in Cloud Environment", pp.89-92.
16. Muhsina Hassan and K R Remesh Babu, "Comparative Study of Flaw Detection Techniques in Network Protocols", pp. 93-96.
17. Sareena Hassan and K R Remesh Babu, "A Survey on Path Selection Strategy for Wireless Sensor Networks", pp. 97-100.
18. Nisreen M Ali and K R Remesh Babu, "LIN Protocol for Low Power and Lossy SRD Networks", pp. pp.105-109.
19. Divya P V and K R Remesh Babu, "Receiver Initiated Algorithm: Approach for Monitoring Load in Cloud Environment", pp. 110-113.
20. Saranya S and K R Remesh Babu, "Multi-Tenant Application with Cache for Improved Performance", pp.114-118.
21. Hashmi K H and K R Remesh Babu, "Comparative Study of Various Intrusion Detection Systems with Secure EAACK", pp.119-122.
22. Ammu Joseph and K R Remesh Babu, "Software Defined Networking: Evolution and Application in Cloud Computing", pp.127-130.
23. Anu Rose Abraham and K R Remesh Babu, "QoS Aware Data Replication in Cloud System", pp.131-135.
24. Suja G J, Sangeetha Jose M and K R Remesh Babu, "New Architecture for Highly Secured I/O Transfer with Data on Timer Streaming, pp.136-141.
25. Sahana K I and Sangeetha Jose, "Per Hop Data Encryption Using Variance in Diffie Hellman for the Public Network Privacy", pp. 142-145.

## **Department of Electronics and Communication Engineering**

### **1. Introduction**

Department of Electronics & Communication Engineering was established in the year 2000 with annual intake of 60 students for B.Tech. degree course. First UG batch completed their course in 2004 and twelve batches have passed out since its inception. Our department has qualified faculty in the cadre of Assistant Professor, Associate Professor and Professor and a team of well experienced technical staff. PG program with specialization in VLSI and Embedded Systems was started in 2013 with a sanctioned strength of 18 students per batch. The department has sufficient built up space and state-of-the-art infrastructure facilities to impart quality education to the graduate students. Our department has a well-equipped PG lab with advanced industry standard hardware and software tools to train PG students to meet industry demand. The department has financial funding from TEQIP Phase II for infrastructure development, student and faculty training and other technical programmes.

### **2. Infrastructure Development**

The department occupied a built up space of roughly 17136 sq. ft. (1542 sq.m.) in the new academic block in June 2015. Five lecture halls, Faculty rooms, HOD room, four UG labs and an Embedded System lab for PG students are part of this built up space. All class rooms, labs and staffrooms are ICT enabled. The entire department is provided with power back up and Wi-Fi connectivity. PG lab has been set up with state of the art machines and server. This lab is equipped with commonly used software and latest simulation tools like Cadence and Xilinx. UG communication lab has been modernized with USB microwave power sensor and digital storage oscilloscopes.

### 3. Equipments purchased in the department

Sl. No	Equipment Name	Amount	Where it installed/purpose
1	Microwave power sensor	295199/-	Advanced communication lab - conducting practical sessions for UG Students
2	Function generator	226870/-	Circuits lab- conducting practical sessions for UG Students
3	Power supply	42910/-	Circuits lab- conducting practical sessions for UG students
4	Frequency meter & coaxial wave guide adaptor	10000/-	Advanced communication lab / Microwave lab- conducting microwave lab sessions for UG students
5	Beagle Bone Black Rev C	48000/-	Embedded system lab- conducting Hardware practical sessions for PG students
6	8GB Class 10 SD Card	3600/-	Embedded system lab- For enhancing the memory of pc's or machines
7	Power Adaptor for beagle bone	2400/-	Embedded system lab- Additional Expanded peripheral for beagle bone board
8	Cubie Truck	13400/-	Embedded system lab- conducting Open source Hardware practical sessions for PG students
9	Servo Motor	900/-	Embedded system lab- Conducting Embedded Experiments for PG Students
10	DC Motor	2700/-	Embedded system lab- Conducting Embedded Experiments for PG Students
11	Berk connector single stand with both end male	750/-	Embedded system lab- Conducting Embedded Experiments for PG Students
12	Berk connector single stand with both end female	1750/-	Embedded system lab- Conducting Embedded

			Experiments for PG Students
13	Berk connector single stand with one end male and other end female	900/-	Embedded system lab- Conducting Embedded Experiments for PG Students
14	Consumables to electronic workshop	53755/-	Electronic Workshop- Conducting Workshop sessions for first year UG students

#### 4. Academic activities

##### A. Training Programmes Conducted for Faculty/Staff

Sl. No	Course Name	Date & Duration	Resource Person's Name
1	Training programme on ELVIS-II Prototype board with Signex and Datex Cards for Faculty of this institution	19 <sup>th</sup> to 20 <sup>th</sup> Aug 2015	Mr.Sivakumar S Sr. Application Engineer, Starcom Information Technology Ltd, Banglore

##### B. Programmes Conducted for Students

Sl. No	Course Name	Date & Duration	Resource Person's Name
1	FPGA System Design Training Programme for Sem II M.Tech ECE Students	2 <sup>nd</sup> to 4 <sup>th</sup> Feb 2016	Mr.Shajo Mathew, Mr.Sudeesh S, Mr.Anuraj V ENTUPLE Technologies
2	Softskill training Programme for s4 ECE students	27 <sup>th</sup> to 29 <sup>th</sup> Jan 2016	Mr. Marcuz Carrier Launcher
3	Technical Placement Training Programme	5 <sup>th</sup> to 7 <sup>th</sup> Sep 2015	Mr. Rajaramanan, (Technical Aptitude Trainer) ,Mr. Joseph James (Aptitude trainer), Vishnu Raj (Soft skill verbal

			Trainer), Mr.Jayesh JL (training Consultant)
4	Infosys Oriented training programme	3 <sup>rd</sup> to 4 <sup>th</sup> Oct 2015	Mr.Reghuram Warrior, Mr.Shijith S Shaji, Mr.KarthikKesav, Mr.Deepak Jose
5	Aptitude training programme	14 <sup>th</sup> to 16 <sup>th</sup> Jan 2016	Mr.KarthikKeasav, Mr.Naveen Parameshwar, Mr.Reghuram warrior, Mr.Deepak Jose
6	Soft skill training programme	20 <sup>th</sup> to 22 <sup>nd</sup> Jan 2016	Mr.KarthikKeasav, MR.NaveenParameshwar, Mr.Deepakjose, Mr.Jerald Thomas
7	Workshop on programming with Beagle Bone	11 <sup>th</sup> to 13 <sup>th</sup> Nov 2015	Mr.DhanishVijayan-Elementz Engineers guide Pvt .Ltd
8	Workshop on “Programming in C”	31th Oct, 1-2 Nov	M.Tech students GECi
9	Mini Project Orientation	18 <sup>th</sup> -20 <sup>th</sup> Jan. 2016	Ecian Technologies
10	System Simulation	Jan 21 <sup>st</sup> – 22 <sup>nd</sup>	Dr. Renu Jose IIT, Pala



FPGA System Design Training Programme for II Semester M. Tech ECE Students



Soft skill training Programme for S4 ECE students



Workshop on Programming with Beaglebone

### Visiting Faculty Programmes

Sl. No	Programme Title	Date & Duration	Resource Person's Name
1	Visiting Faculty Programme for 1 <sup>st</sup> Year B Tech ECE Students of this institution	5 <sup>th</sup> Aug2015	Dr. Pradeepa R Scientist NPOL



### Training Programmes Attended

Sl. No	Faculty/Staff Name	Title of the Programme	Organizing Institution	Date & Duration of the Programme
1	Ms. AshaJ	Analog Integrated circuit design using Cadence	ENTUPLE Technologies	7 <sup>th</sup> to 11 <sup>th</sup> Dec 2015
2	Ms. NaveenaJoshy	Faculty development programme Pedagogical	TLC,IIT-Madras	18 <sup>th</sup> to 20 <sup>th</sup> Jan 2016
3	Ms. Varsha A	Faculty development programme Pedagogical	TLC,IIT-Madras	18 <sup>th</sup> to 20 <sup>th</sup> Jan 2016
4	Ms. SethuMerinGeorge	Faculty development programme Pedagogical	TLC,IIT-Madras	18 <sup>th</sup> to 20 <sup>th</sup> Jan 2016
5	Ms. GeethuPrakash	Analog Integrated circuit design using Cadence	ENTUPLE Technologies	7 <sup>th</sup> to 11 <sup>th</sup> Dec 2015
6	Ms. Linu Shine	Short term programme on Finite element analysis	GEC Idukki	23 <sup>rd</sup> Nov to 27 <sup>th</sup> Nov 2015
7	Ms. Linu Shine	Short term programme on renewable energy resources	CET	11 <sup>th</sup> to 16 <sup>th</sup> Jan 2016
8	Ms. Premanand	Three day workshop on Outcome based Education and NBA Accreditation	College of engineering, Kidangoor	10 <sup>th</sup> to 12 <sup>th</sup> Dec 2015
9	Ms. Sujeesh K V,	Technical writing in LATEX	GEC Idukki	9 <sup>th</sup> to 12 <sup>th</sup> Dec 2015
10	Ms. Varsha A,	Technical writing in LATEX	GEC Idukki	9 <sup>th</sup> to 12 <sup>th</sup> Dec 2015
11	Ms. NaveenaJoshy	Technical writing in LATEX	GEC Idukki	9 <sup>th</sup> to 12 <sup>th</sup> Dec 2015
12	Ms. SethuMerin George	Technical writing in LATEX	GEC Idukki	9 <sup>th</sup> to 12 <sup>th</sup> Dec 2015
13	Ms. Aswathy G Nair	Technical writing in LATEX	GEC Idukki	9 <sup>th</sup> to 12 <sup>th</sup> Dec 2015
14	Ms. Aswathy G Nair	Recent trends in Control of drives	GEC Idukki	18 <sup>th</sup> to 20 <sup>th</sup> Jan 2016
15	Ms. GeethuPrakash	Recent trends in Control of drives	GEC Idukki	18 <sup>th</sup> to 20 <sup>th</sup> Jan 2016
16	Ms. Anu S Ram	Recent trends in	GEC Idukki	18 <sup>th</sup> to 20 <sup>th</sup> Jan

		Control of drives		2016
17	Mr. Sham K J ,	PETARC	Power Engineers Training and Research Centre, Moolamattom	20 <sup>th</sup> to 22 <sup>nd</sup> Jan 2016
18	Mr. Babu TM	PETARC	Power Engineers Training and Research Centre, Moolamattom	20 <sup>th</sup> to 22 <sup>nd</sup> Jan 2016
19	Ms.Rajalekshmi G	PETARC	Power Engineers Training and Research Centre, Moolamattom	20 <sup>th</sup> to 22 <sup>nd</sup> Jan 2016
20	Ms.Ramla T A	PETARC	Power Engineers Training and Research Centre, Moolamattom	20 <sup>th</sup> to 22 <sup>nd</sup> Jan 2016
21	Mr.Sham K J	Total station surveying and Advanced Surveying technique	GEC Idukki	27 <sup>th</sup> to 29 <sup>th</sup> Jan 2016
22	Ms.GeethuPrakash	Total station surveying and Advanced Surveying technique	GEC Idukki	27 <sup>th</sup> to 29 <sup>th</sup> Jan 2016
23	Ms.Aswathy G Nair	Total station surveying and Advanced Surveying technique	GEC Idukki	27 <sup>th</sup> to 29 <sup>th</sup> Jan 2016
24	Mr.A J Johny	PETARC	Power Engineers Training and Research Centre, Moolamattom	8 <sup>th</sup> to 9 <sup>th</sup> Feb 2016

## Expert Talks/Conference chaired outside college

Sl. No	Faculty Name	Title of the Talk	Institution Name
1	Dr. Santhosh Kumar S	IEEE International Conference on Control Communication and computing	College of Engineering Thiruvananthapuram (20 <sup>th</sup> Nov 2015)
2	Dr. Santhoshkumar S	Real-time Image Processing with OpenCV	Government Engineering College-Kozhikode Jan-2016

## 2. Achievements

### Students

- DarsanaBaburaj, of S4 ECE was awarded **First Price** with **A Grade** in “Kavyakeli” - Mahatma Gandhi University youth festival, 2016
- Harimohan M S, of S7 ECE has secured **A Grade** in “Bharathanatyam” (Male) competition in the Mahatma Gandhi University youth festival, 2015
- DarsanaBaburaj, of S2 ECE has secured **A Grade** in “Aksharaslokam” and “Kavyakeli” - Mahatma Gandhi University youth festival, 2015

### Activities

#### National Conference GECIAN2015

As part of GECIAN Annual Conference 2015 the Department of Electronics and Communication Engineering, the department conducted organized keynote address and invited talks. The organising Secretary of GECIAN 2015 was Prof.Jalaja M J.,HOD, Dept. of ECE and the organizing chair was Dr. Santhosh Kumar, Associate Professor, Dept. of ECE. The keynote address of ECE Dept. was delivered by Dr. Y. SrinivasaRao, Senior Research Advisor, TEQIP. The total papers received by ECE Dept. was 47,out of which 29 were accepted.The technical program by research topics were organized in 5 sessions.



GECIAN 2015 (ECE) - Session



GECIAN 2015 (ECE) - Session



GECIAN 2015 (ECE) - Session

**GATE Qualified Students**

Sl. No	Student Name	Marks	Rank
1	Joji Joseph	31	10023
2	Ananya M P	29.05	12484
3	Sreenath M	29.05	12480
4	Abin Peter	29	12500
5	Mohammad Fazil	28.96	12816
6	Anoop Kumar K V	28.04	13919
7	Aravind V P	25.64	18400
8	DhanalakshmiRenganathan	25.37	18672
9	Sambhu Mohan	23	24016
10	Sreeraj T K	22.61	25240

**3. Result Analysis**

<b>DEPARTMENT</b>		<b>ELECTRONICS AND COMMUNICATION ENGINEERING</b>		
Semester		8		
Year of admission		2011		
Total No of students		68		
Sl.No	Subject	No of pass	Pass %	No of failures
1	Wireless Communication	65	95.59	3
2	Communication Networks	65	95.59	3
3	Light Wave Communication	66	97.06	2
4	Micro electro Mechanical system	66	97.06	2
5	Mechatronics	65	95.59	3
6	VLSI and Embedded System	65	95.59	3
7	Project	68	100	0
8	Viva Voice	68	100	0
TOTAL NO OF STUDENTS APPEARED		68		
TOTAL NO OF STUDENTS PASSED		59		
TOTAL NO OF STUDENTS FAILED		9		
PASS PERCENTAGE		<b>86.76%</b>		

<b>DEPARTMENT</b>		<b>ELECTRONICS AND COMMUNICATION ENGINEERING</b>		
Semester		6		
Year of admission		2012		
Total No of students		67		
Sl. No	Subject Name	No of pass	Pass %	No of failures
1	Digital Communication Techniques	50	74.63	17
2	Digital Signal Processing	50	74.63	17
3	Radiation and Propagation	54	80.6	13
4	Computer Architecture & Parallel Processing	54	80.6	13
5	Microcontrollers and Applications	55	82.09	12
6	High Speed Digital Design	18	90	2
7	Medical Electronics	44	93.62	3
8	Microprocessor and Microcontroller Lab	63	94.03	4
9	Mini Project	65	97.01	2
TOTAL NO OF STUDENTS APPEARED		67		
TOTAL NO OF STUDENTS PASSED		39		
TOTAL NO OF STUDENTS FAILED		28		
PASS PERCENTAGE		<b>58.21%</b>		

DEPARTMENT		Electronics and Communication		
Semester		7		
Year of admission		2012		
Total No of students		67		
Sl. No	Subject Name	No of pass	Pass %	No of failures
1	VLSI Design	57	85.07	10
2	Information Theory and Coding	61	91.04	6
3	Microwave Engineering	48	71.64	19
4	Electronic Instrumentation	53	79.10	14
5	Embedded Systems	53	79.10	14
6	Digital Image Processing	54	80.6	13
7	Advanced Communication Lab	62	92.54	5
8	Signal Processing Lab	64	95.52	3
9	Seminar	63	94.03	4
10	Project	67	100	0
TOTAL NO OF STUDENTS APPEARED		67		
TOTAL NO OF STUDENTS PASSED		37		
TOTAL NO OF STUDENTS FAILED		30		
PASS PERCENTAGE(% OF PASS)		<b>55.22%</b>		



DEPARTMENT		Electronics and Communication		
Semester		4		
Year of admission		2013		
Total No of students		63		
Sl. No	Subject Name	No of pass	Pass %	No of failures
1	ENGINEERING MATHEMATICS II	55	87.3	8
2	PRINCIPLE OF MANAGEMENT	61	96.8	2
3	SIGNALS AND SYSTEMS	44	69.8	19
4	DIGITAL ELECTRONICS	54	85.7	9
5	ANALOG COMMUNICATION	59	93.7	4
6	ANALOG CIRCUITS II	55	87.3	8
7	ANALOG CIRCUITS II LAB	60	95.2	3
8	ANALOG COMMUNICATION LAB	61	96.8	2
TOTAL NO OF STUDENTS APPEARED		63		
TOTAL NO OF STUDENTS PASSED		38		
TOTAL NO OF STUDENTS FAILED		25		
PASS PERCENTAGE(% OF PASS)		<b>60.3%</b>		

DEPARTMENT		Electronics and Communication		
Semester		V		
Year of admission		2013		
Total No of students		61		
Sl. No	Subject Name	No of pass	Pass %	No of failures
1	Mathematics IV	58	95%	3
2	Control system	52	85.2%	9
3	Digital System Design	53	86.8%	8
4	Electrical drives and Control	46	75.4%	15
5	Applied Electromagnetic theory	49	80.3%	12
6	Microprocessors and application	50	81.9%	11
7	Digital Electronics lab	51	83.6%	10
8	Electric drives and Control lab	53	86.8%	8
TOTAL NO OF STUDENTS APPEARED		61		
TOTAL NO OF STUDENTS PASSED		35		
TOTAL NO OF STUDENTS FAILED		26		
PASS PERCENTAGE(% OF PASS)		<b>57.3%</b>		

DEPARTMENT		ELECTRONICS AND COMMUNICATION ENGINEERING		
Semester		I,II		
Year of admission		2014		
Total No of students		46		
Sl. No	Subject Name	No of pass	Pass %	No of failures
1	ENGINEERING MATHEMATICS I	45	97.83	1
2	PHYSICS	43	93.48	3
3	CHEMISTRY	45	97.83	1
4	MECHANICS	29	63.04	17
5	GRAPHICS	39	84.78	7
6	CIVIL	45	97.83	1
7	MECHANICAL	36	78.26	10
8	ELECTRICAL	44	95.65	2
9	ELECTRONICS	41	89.13	5
10	MECHANICAL W/S	46	100	0
11	ELECTRICAL W/S	46	100	0
TOTAL NO OF STUDENTS APPEARED		46		
TOTAL NO OF STUDENTS PASSED		24		
TOTAL NO OF STUDENTS FAILED		22		
PASS PERCENTAGE		<b>52.17%</b>		

DEPARTMENT		ELECTRONICS AND COMMUNICATION ENGINEERING		
Semester		3		
Year of admission		2014		
Total No of students		49		
Sl. No	Subject Name	No of pass	Pass %	No of failures
1	ENGINEERING MATHEMATICS II	47	95.92	1
2	ECONOMICS AND COMMUNICATION SKILLS	48	97.96	0
3	NETWORK THEORY	43	87.76	5
4	SOLID STATE DEVICES	44	89.80	4
5	ANALOG CIRCUITS – I	42	85.71	6
6	COMPUTER PROGRAMMING	34	69.39	14
7	ANALOG CIRCUITS LAB	43	87.76	5
8	PROGRAMMING LAB	46	93.88	2
TOTAL NO OF STUDENTS APPEARED		48		
TOTAL NO OF STUDENTS PASSED		28		
TOTAL NO OF STUDENTS FAILED		21		
PASS PERCENTAGE		<b>57.14%</b>		

## 4. Publications

Sl. No	Authors	Title of the Article	Name of Journal/Conference (with date/place held) Mention Int./National	Vol. No. /Issue No./Page No.
1	Prof.Jalaja M J	Delay and Lifetime Performance of Underwater Wireless Sensor Networks with Mobile Element Based Data Collection	International Journal of Distributed Sensor Networks, Hindawi Publishing Corp	Vol. 2015, Article ID 128757, 22 pages, 2015. doi:10.1155/2015/128757.
2	Prof.Jalaja M J	Application-Oriented On-Demand Data Collection in Sparse Underwater Acoustic Sensor Networks Using Mobile Elements	International Journal on Advances in Networks and Services, IARIA Publishing	Vol. 8, No. 1&2, 2015, PP: 1-16.
3	Prof.Jalaja M J	“Maximum Lifetime Routing in Underwater Sensor Networks using Mobile Sink for Delay-Tolerant Applications	IEEE TENCON, Macau	
4	Dr.Santhos hkumar S	NEC2 Based Optimum Design of Circularly Polarized Axial Mode Helical Antenna with Non-linear Pitch Profile Modeled using Catmull–Rom Spline and Particle Swarm Optimization	International Journal of Engineering and Advanced Technology (IJEAT)	ISSN: 2249 – 8958, Volume-5 Issue-2, December 2015
5	Dr.Santhos hkumar S	Radiating Flare Design of Tapered Slot Loaded Vivaldi Antenna Using Fourier Series Approach	International Journal of Engineering and Advanced Technology (IJEAT)	Volume-5 Issue-3, February 2016, ISSN: 2249-8958
6	Dr. Santhosh Kumar S	Window Based Concurrent BIST Using SRAM Cells with Diagnostic Data Compression	National conference GECI –29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no: 240-244
7	Dr. David Solomon George	Implementation of a 1.2 V Piecewise Nonlinear Curvature Corrected Bandgap Reference in 180 nm CMOS Process	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:250-253
8	Prof.Asha J	Low Power First Order Sigma Delta Modulator with 1GHz of Sampling Frequency	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:254-257
9	Dr. David	Performance Analysis of	National conference	ISBN 978-93-

	Solomon George	Spanning Tree Adder	GECI-29 <sup>th</sup> SEP 2015	85477-19-5 Page no:273-276
10	Prof.Linu Shine	FPGA Implementation of Area Efficient CORDIC Design for Fixed Angle Rotation	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:277-279
11	Prof.Asha J	Efficient Low Power MAC Unit Employing MTCMOS Technique	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:283-285
12	Dr. Santhosh Kumar S	Design of RFID Based Embedded System for Solving Vehicle Emissions	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:286-289
13	Dr. David Solomon George	Smart Farming	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:290-293
14	Prof.Asha J	Parallel Tree Structure Based Low Power Double Precision Floating Point Comparator	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:302-309
15	Prof.Asha J	Power Reduction in Digital VLSI Circuits using Combined Clock Gating and Power Gating	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:310-314
16	Prof.Linu Shine	low Power Baugh Wooley Multiplier with Reduced Ground Bounce	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:315-318
17	Prof.Shajahan E.S	Design And Implementation Of An Efficient Arithmetic Divider Based On Vedic Mathematics	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:269-272
18	Prof. Nadheera K M	Vhdl Implementation Of Single Precision Floating Point Addition Unit And It's Verification Using Matlab.	National conference GECI-29 <sup>th</sup> SEP 2015	ISBN 978-93-85477-19-5 Page no:280-282
19	Prof. Prem-anand B, Magnel Rose Mathew	SubNyquist Sampling of Acoustic Signals Based on Chaotic Compressed Sensing	International conference on Electronics, Signal Processing and Communication Engineering ( E-	

			SPACE 2015) GEC Thrissur	
20	Prof. Prem- anand B,Aswani T S	Area Efficient Floating Point Addition Unit with Error Detection Logic	International conference on Electronics, Signal Processing and Communication Engineering ( E- SPACE 2015) GEC Thrissur	

## ELECTRICAL AND ELECTRONICS ENGINEERING

### Introduction

The department of Electrical and Electronics Engineering started functioning right from the beginning of Govt. Engineering college, Idukki, in the year 2000. The four year B-Tech course admits sixty students each year. Six numbers of lateral entry students are also admitted in the third semester. The course is focused on developing quality engineers in the field of Electrical and Electronics Engineering for the benefit of the society. The Department also offers PG program in Power Electronics & Control which started functioning from the year 2011. The department has well equipped laboratories namely Electrical Machine lab, Power Electronics and System lab, Electronic Circuit and Digital lab, Software lab and Electrical Work shop. Experienced and competent teachers & technical staff add to the strength of the department.

### 1. Infrastructure Development [if any]

Purchased chairs and tables for the Department

### 2. Equipments purchased in the department

Equipment Name	Amount	Where it Installed/Purpose
Generator	Rs. 16,46,311	Department buildings
Computer	Rs. 69,7788	Department Labs

### 3. Academic activities

#### Training Programmes Conducted for Faculty/Staff

SI No	Course Name	Date & Duration	Resource Person's Name
1	Application of Power Electronics in Electrical Drives	18/01/2016 to 20/01/2016	Dr. Dinesh Gopinath & Prof. A.S. Shajilal
2	Training on FPGA control for Inverted Drives	23/11/2015 to 25/11/2015	Er. Bernard joseph & Er. Williams John Senoir Research Engineers , ENTUPLE Technology



### Programmes Conducted for Students

SI No	Course Name	Date & Duration	Resource Person's Name
1	Positive thinking and Personality Development	08/03/2016	Fr. Thomas Zacharia Life Skill Trainer
2	Training on FPGA control for Inverted Drives	23/11/2015 to 25/11/2015	Er. Bernard Joseph & Er. Williams John Senior Research Engineers, ENTUPLE Technology
3	Software Tools for Thesis Preparation	29-12-2015 to 31-12-2015	Dr. R. M. Shereef & Prof. Asokkumar. A. Dept. of EEE CET
4	Opportunities and challenges electrical engineers in industry	07/08/2015	Er. Shaji Abraham Executive Engineer KSEB

### Visiting Faculty Programmes

SI No	Resource Person's Name & Designation, Official Address	Date & Duration	To whom
1	Er. Shaji Abraham Executive Engineer KSEB	07/08/2015	First Year B. Tech Students
2	Fr. Thomas Zacharia Life Skill Trainer	08/03/2016	For all Girls Students
3	Dr. R. M. Shereef & Prof. Asokkumar. A. Dept. of EEE, CET	29-12-2015 to 31-12-2015	For M.Tech Students

## Training Programmes Attended

Faculty/Staff Name	Title of the Programme	Organizing Institution	Date & Duration of the Programme
Dr.Arun Kishore W.C.	Control of Drives for Robotics and Automobiles	College of Engineering Thiruvananthapuram	23/11/2015 to 27/11/2015
	Key Issues and Challenges with Renewable Energy Integration into Grid	College of Engineering Thiruvananthapuram	11/01/2016 to 16/01/2016
	Power Industry Familiarization Programme	KSEB Moolamattom	20/01/2016 to 22/01/2016
	4th batch of training on Management Capacity Enhancement	IIM Trichy	16/11/2015 to 20/11/2015
Dr. Mini V. P.	Computer Aided Analysis of Power System	College of Engineering Thiruvananthapuram	11-11-2015 to 17-11-2015
	Key Issues and Challenges with Renewable Energy Integration into Grid	College of Engineering Thiruvananthapuram	11/01/2016 to 16/01/2016
	Power Industry Familiarization Programme	KSEB Moolamattom	20/01/2016 to 22/01/2016
Prof. T. Samina	Power Industry Familiarization Programme	KSEB Moolamattom	20/01/2016 to 22/01/2016
	Computer Aided Analysis Of Power System	College of Engineering Thiruvananthapuram	11-11-2015 to 17-11-2015
Prof. Sunilkumar	Power Industry Familiarization Programme	KSEB Moolamattom	20/01/2016 to 22/01/2016
	Outcome based education and NBA accreditation	College of engg Kidangoor	10-12-2015 to 12-12-2015
	Recent trends in cryptography	GEC Idukki	11-11-2015 to 14-11-2015
Prof. Sreeja S.	Power Industry Familiarization Programme	KSEB Moolamattom	20/01/2016 to 22/01/2016

Prof. Sreelekha V.	Grid integration on renewable energy system	RIT Kottayam	01/07/2015 to 03/07/2015 (3 days)
	control Engineering analysis and design with MATLAB /SIMULINK	IIST Valiamala,TVM	15/12/2015 to 18/12/2015(4 days)
	control power converters and drives	RIT Kottayam	04/01/2015 to 09/01/2015 (6 days)
Prof. Anilkumar V M	Harmonics and power quality contemporary issues and solutions	Thyagaraja College of Engg. Madurai	22/04/2015 to 05/04/2015 (14 days)
	Research Methodology	GEC Idukki	22/06/2015 to 26/06/2015 (5 days)
	Challenges on insulation reliability in smart grid applications	Pondichery Engineering College	23/11/2015 to 27/11/2015(5 days)
	Pedagogical training	IIT Madras	21/09/2015 to 23/09/2015 (3 days)
Prof. Vijayasree G.	FDP(Pedagogy)	IIT Madras	26-2Feb/15(3days)
	Grid Integration of Renewable Energy Systems	RIT, Kottayam	01-7 Nov 15(3 days)
	Computer aided Powersystem Analysis	CET	11-17 Nov(7 days)
	Power Industry Familiarisation Training Programme	PETARC , KSEB,Moolamattom	2-4 Dec 2015 (3 days)
	Control Engineering Analysis and Design with MATLAB/SIMULINK	IISST	15-18 Dec 2015(4 days)
	. Control of Power Converters and Drives	RIT, Kottayam	4-9 Jan 2016(6 days)
Prof. Rajesh M.	Faculty development programme on "Modelling and control in Power Electronics"	GEC Thrissur	14/07/2015 to 17/07/2015

	Advances in Nonlinear control	College of Engineering Kidangoor	31/03/2016 to 01/04/2016
Prof. Frieda Mohan	Recent trends in Cryptography	GEC Idukki	11/11/2015 to 14/11/2015 (4 days)
	Power Sector Familiarization programme for faculty members	KSEB at PETARC Moolamattom	02/12/2015 to 04/12/2015(3 days)
	Technical writing in LaTeX	GEC Idukki	09/12/2015 to 12/12/2015 (4 days)
	Control Engineering analysis and Design in MATLAB /SIMULINK	IIST Valiamala,TVM	15/12/2015 to 18/12/2015 (4 days)
	Introduction to Labview Real time and FPGA programming	RIT Kottayam	25/01/2016 to 30/01/2016 (6 days)

**Expert Talks/Conference chaired outside college**

<b>Faculty Name</b>	<b>Title of the Talk</b>	<b>Institution Name</b>
Dr.Arun Kishore W.C.	Faculty development programme on "Modelling and control in Power Electronics"	GEC Thrissur
	Advances in Nonlinear control	College of Engineering Kidangoor
Dr. Mini V. P.	Deliver an expert talk about Design and development of a three phase Induction motor for FDP	GEC idukki (sponsored by TEQIP)
	Fault Detection and diagnosis of three phase induction motor drive system using fuzzy logic for FDP in EEE Department	CET Thiruvananthapuram (sponsored by DTE)
	Chair National Conference	Government Engineering College Barton Hill

## 4. Achievements

### Faculty

- Acquired Ph.D for Prof. V.P. Mini in “Fault Detection and Diaganosis of three phase induction motor drive system using Fuzzy logic.

### Students

#### University Rank Details

Rank No	Student Name	B.Tech/M.Tech
1	Vibisha	M. Tech
2	Anjali Mohan	M. Tech
3	Arya S	M. Tech

#### GATE Qualification

Student name	GATE Score
Arunmaneesh R B	344

## 5. Publications

Sl. No.	Authors	Title of the Article	Name of Journal/Conference (with date/place held) Mention Int./National	Vol. No. /Issue No./Page No.
1	Sreeja S.	Precision Munition Guidance and Moving Target Position Estimation	Journal of Guidance , Control and Dynamics, AIAA, 2016	Accepted
2	Sreeja S.	Precision Targeting in Guided Munition Using IR sensor and MmW radar	Journal of Applied Remote Sensing, SPIE, 2016	Accepted
3	Sreeja S.	Precision Munition Guidance and 2-D Target position Estimation	AIAA Guidance, Navigation and Cntrol Conference, 2016, 10.2514/6.2016 – 2113	
4	Sreeja S.	Precision Targeting in Guided Munition Using IR sensor and MmW Radar	SPIE Security + Defence, Proceeding of SPIE, Proc. SPIE 9653, Target and Background Signatures, 96530M	

			(21 October 2015); doi: 10.1117/12.2194488	
5	Dr. Arun Kishore W.C.	Trajectory optimization of an autonomous dynamic soaring UAV	IEEE International Conference on Control Communication & Computing India (ICCC) at College of Engineering Thiruvananthapuram, India, 19-21, November 2015	pp 95 – 100
6	Dr. Arun Kishore W.C.	Mu-synthesis in state space; applied to a typical Satellite Launch Vehicle	2015 International Conference on Control Communication & Computing India (ICCC) at College of Engineering Thiruvananthapuram, India, 19-21 November 2015,	pp 113 – 118
7	Dr. Arun Kishore W.C.	Design Of Predictive Control Strategies For The Optimisation Of Drinking Water Network In Thiruvananthapuram City.	Second International Conference on Trends in Technology for Convergence – TITCON'15 at AVS Engineering College, Coimbatore, India, 10-11 April, 2015	
8	Dr. Mini V. P.	A battery less Boost Converter for Thermal Harvesting System for automotive applications	IEEE International conference on Control, Communication and Computing India 2015	
9	Dr. Mini V. P.	Rotor Fault Detection and Diagnosis of Three Phase Induction Motor Drive System	IEEE International conference on Control, Communication and Computing India 2015	
10	Dr. Mini V. P.	An efficient Solar Powered Induction Motor Drive System	IEEE International conference on Control, Communication and Computing India 2015	
11	Dr. Arun Kishore W.C.	Heteroclinic Connection in Galilean Moon Orbiter Mission Using Space Manifold Dynamics	National Conference on Technological Trends (NCTT)-2015 College of Engineering Thiruvananthapuram	pp 1099-1104.

			September 2015,	
12	Dr. Arun Kishore W.C.	Fault Identification and Reconfiguration in an Over-actuated System	National Conference on Technological Trends (NCTT)-2015 College of Engineering Thiruvananthapuram September 2015,	pp 893-898
13	Dr. Arun Kishore W.C.	Trajectory Optimization for maximizing specific energy of a Dynamic Soaring UAV	National Conference on Technological Trends (NCTT)-2015 College of Engineering Thiruvananthapuram September 2015 .	pp 1063-1068
14	Dr. Arun Kishore W.C.	Speed Control of Switched Reluctance Motor Using PI Controller.	GECI Annual National Conference on Technological Trends, 29th to 30th September 2015 at Government Engineering College Painavu, Idukki, India.	
15	Dr. Arun Kishore W.C.	Single Input Buck, Boost Converter for Industrial Applications.	GECI Annual National Conference on Technological Trends, 29th to 30th September 2015 at Government Engineering College Painavu, Idukki, India.	
16	Dr. Mini V. P.	A battery less Boost Converter for Thermal Harvesting System	Second National Conference GECIAN - 20-15, Sept. 29 -30	
17	Dr. Mini V. P.	Power Electronic Traction Transformer with minimum Losses	Second National Conference GECIAN - 20-15, Sept. 29 -30	
18	Dr. Mini V. P.	Emerging Technologies	National Conference 2015 - GEC Barton Hill	
19	Prof. Samina T.	An advanced twin buck converterfor dc applicationswith zero voltage transition	Second National Conference GECIAN - 20-15, Sept. 29 -30	
20	Prof. Samina T.	An improved high voltage gain DC-DC converter employingthree state	Second National Conference GECIAN - 20-15, Sept. 29 -30	

		switching cell and multi stage multiplier cell for photovoltaic applications		
21	Prof. Sunilkumar	A PWM Current Controller for Switched Reluctance Motor	Annual national conference 2015	
22	Prof. Sreelekha V.	An AC DC converter integrating boost PFC circuit and a multilevel DC DC converter	Second National Conference GECIAN - 20-15, Sept. 29 -30	
20	Prof. Sreelekha V.	Single phase current fed switched inverter	Second National Conference GECIAN - 20-15, Sept. 29 -31	
21	Prof. Anilkumar V M	A hybrid power control concept for PV resonant converter	Second National Conference GECIAN - 20-15, Sept. 29 -30	
22	Prof. Anilkumar V M	High frequency inverter fed by Non conventional energy sources	Second National Conference GECIAN - 20-15, Sept. 29 -30	
23	Prof. Frieda Mohan	Photovoltaic based single stage inverter using Cuk converter	Second National Conference GECIAN - 20-15, Sept. 29 -30	
24	Prof. Frieda Mohan	A Boost Converter with Voltage Multiplier for PV Module with MPPT Algorithm	Second National Conference GECIAN - 20-15, Sept. 29 -31	



## Department of Mechanical Engineering

### 1. Introduction

The Department of Mechanical Engineering is well equipped with qualified and experienced faculty members with research and industrial background. The Department offers B.Tech Degree course in Mechanical Engineering .The Department is nourished with the latest equipments and computing facilities with software's like ANSYS, Solid Edge etc. In the academic year 2015-16 with the help of TEQIP fund various FDPs like Training programme on "Research Methodology", Training Programme on "Finite Element Analysis using ANSYS", Short term training Programme on "Nanotechnology" etc were conducted details of which are included in the table . Faculties and lab staffs of our department went for value added short term training programmes outside the college. Remedial classes and VFS programmes are arranged for the students in order to improve their knowledge and increase the pass percentage.

### 2. Equipments purchased in the department

Equipment Name	Where it installed/purpose	Amount
Hardness testing machine, UTM, Impact testing Machine,	Strength of Materials lab	6.50 Lakhs
All Geared Lathe, Engine lathe , Slitting Saw & Tool and cutter grinder	Machine shop	24.00 Lakhs
Two & Four stroke petrol engine, Bomb Calorimeter Flash& fire point apparatus	Heat Engines lab	10.00 Lakhs

## 3. Academic activities

## Training Programmes Conducted for Faculty/Staff

Sl No	Course Name	Date & Duration	Resource Person's Name
1	Training programme on "Research Methodology"	22/6/15 - 26/06/2015 5days	Rev.Fr.Dr. Jose Kannampuzha , Principal, AJCET Dr. R Sreedharan Dean, NIT Calicut
2	National Energy Conservation Day Programme	14/12/2015 1day	Dr. N Asok Kumar HoD ME,GEC Idukki
3	Short term training Programme on "Nanotechnology"	14/12/15- 18/12/2015 5days	Dr. Manjusha Mathew Assistant Professor Department of Chemistry Nirmalagiri College, Kuthuparamba  Dr. Jeethu S Babu, IIT, Kharagpur  Dr.Ajayan K R CET, Thiruvananthapuram
4	Workshop on "Total Station Surveying and Advanced Surveying"	27/01/16- 29/01/2016 3days	Mr.Sampath Kumar Service Engineer, AIMIL Ltd Mr. Jayadeep T Assistant Exicutive Engineer , Harbour Dept,Kozhikode
5	Training Programme on "Finite Element Analysis using ANSYS"	23/11/2015 – 27/11/2015 5days	Dr.Sunil kumar N Associate Professor and Head,Division of Civil Engineering,CUCEK, CUSAT Dr.K. Prabhakaran Nair Professor ,Department of Mechanical Engineering NIT, Calicut

### Programmes Conducted for Students

SI No	Course Name	Date & Duration	Resource Person's Name
1	Remedial Class for I year B. Tech students	2/1/2015 & 3/01/2015 2 days	Dr. Manu V Thottakkad
2	Remedial Class for I year B. Tech students	1/2/2015 & 3/01/2015 2 days	Mr. Shafeek M
3	Remedial Class for I year B. Tech students	5/1/2015 & 16/01/2015 2 days	Mr. Vivek M
4	Remedial Class for I year B. Tech students	10/1/2015 & 11/01/2015 2 days	Mr. Shiju R S
5	Remedial Class for I year B. Tech students	10/1/2015 & 11/01/2015 2 days	Mr. Shafeek M
6	Remedial Class for I year B. Tech students	06/12/2015 & 07/12/2015 2 days	Dr. Manu V Thottakkad
7	Remedial Class for I year B. Tech students	06/12/2015 & 07/12/2015 2 days	Mr. Manoop M
8	Remedial Class for I year B. Tech students	21/3/2015 & 12/04/2015 2 days	Mr. Francis J Emmatty
9	Remedial Class for I year B. Tech students	21/3/2015 & 20/04/2015 2 days	Mr. Manoop
10	Remedial Class for I year B. Tech students	28/3/2015 & 19/04/2015 2 days	Dr. Manu V Thottakkad
11	Remedial Class for I year B. Tech students	21/3/2015 & 15/04/2015 2 days	Mr. Shafeek M
12	Remedial class for S4 B. Tech students (failed subjects)	03/2/2015 & 12/03/2015 2 days	Mrs. Betsy V Rajan
13	Remedial class for S4 B. Tech students (failed subjects)	17/1/2015 & 14/02/2015 2 days	Dr. Manu V Thottakkad
14	Remedial class for S4 B. Tech students	17/1/2015 &	Mr. Manoop

	(failed subjects)	08/02/2015 2 days	
15	Remedial class for S4 B. Tech students (failed subjects)	26/1/2015 & 1/02/2015 2 days	Mr. Vivek

### Visiting Faculty Programmes

Sl No	Resource Person's Name & Designation, Official Address	Date & Duration	To whom
1	Prof.Sherin Sam Jose Associate professor Amal Jyothy College of Engineering	19/10/2015 & 20/10/2015 2 Days	B.Tech V Semester Mechanical Engineering
2	Prof.Anil Kumar Associate professor St.Joseph College of Engineering	10/10/2015, 11/10/2015, 07/11/2015 & 08/11/2015 4 Days	B.Tech III Semester Mechanical Engineering
3	Prof.Anil Kumar Associate professor St.Joseph College of Engineering	10/11/2015 - 14/11/2015 4 Days	B.Tech III Semester Mechanical Engineering
4	Prof.Anoop M Assistant professor Amal Jyothy College of Engineering	30/10/2015 & 05/11/2015 2 Days	B.Tech V Semester Mechanical Engineering
5	Dr.Sreejith S HoD ME SJCET	15/10/2015, 16/10/2015, 14/11/2015 & 15/11/2015 4 Days	B.Tech V Semester Mechanical Engineering
6	Dr.Sunil Kumar Associate professor & Head Civil Engg Dept, CUSAT	24/11/2015 & 25/11/2015 2 Days	B.Tech V Semester Mechanical Engineering
7	Dr. R Sajith babu Associate professor Govt Engg College Kozhikode	10/11/2015, 11/11/2015 & 12/11/2015 3 Days	B.Tech V Semester Mechanical Engineering

## Training Programmes Attended

Faculty/Staff Name	Title of the Programme	Organizing Institution	Date & Duration of the Programme
Mr. Shanker Krishnan	Pedagogical training	IIT Madras	19/3/15-21/03/2015 3days
Mr. Shafeek M	Pedagogical training	IIT Madras	27/4/15-29/04/2015 3days
Mr. Francis J Emmatty	Pedagogical training	IIT Madras	27/4/15-29/04/2015 3days
Mr. Francis J Emmatty	Faculty development programme on "Multivariate data Analysis"	IIM Kozhikode	15/6/15-19/06/2015 5days
Mr. Shiju R S	STTP on "Finite Element Analysis using ANSYS"	RIT Kottayam	22/6/15-26/06/2015 5days
Mr. Shanker Krishnan	STTP on "Finite Element Analysis using ANSYS"	RIT Kottayam	22/6/15-26/06/2015 5days
Mr. Francis J Emmatty	FDP on "Advancing Research in Management"	IIT Delhi	03/12/15-05/12/2015 3days
Mr. Shanker Krishnan	STTP on "Experimental Techniques in Fluid Mechanics"	College of Engineering Thiruvananthapuram	01/12/15-05/12/2015 5days
Mr. Shiju R S	STTP on "Experimental Techniques in Fluid Mechanics"	College of Engineering Thiruvananthapuram	01/12/15-05/12/2015 5days
Mr. Francis J Emmatty	Short term Course on Evolving Synergy of Statistical Analysis	National Institute of Technology Hamirpur	21/12/15-25/12/2015 5days
Dr. Manu V Thottackkad	Short term Course on Fundamentals of Engineering Tribology with Applications	IIT Delhi	7/12/15-11/12/2015 5days
Mr. Yadhu G	Landmark Education Forum	Bangalore	08/01/16-12/01/2016 5days

Mr. Shiju R S & Dr. Manu V Thottackkad	Pedagogical Training at IIT Madras	IIT Madras	10/03/16-12/03/2016 3days
Sri. Sunny Joseph, Sri. Tony Varghese & Sri. Jinomon O R	Power Industry Familiarization Programme	KSEB Moolamattom	11/01/16-13/01/2016 3days
Sri. Shanker Krishnan	Power Industry Familiarization Programme	KSEB Moolamattom	08/02/16-10/02/2016 3days
Sri. Vivek M	Power Industry Familiarization Programme	KSEB Moolamattom	20/01/16-22/01/2016 3days

#### Expert Talks/Conference chaired outside college

Faculty Name	Title of the Talk	Institution Name
Dr. Manu V Thottackkad	Nano fluid	TKM College of Engineering, Karicode
Dr. Manu V Thottackkad	Nano fluid	Younis College of Engineering, Kollam
Nano fluid	Conference chaired	Amal Jyothy College of Engineering, Kanjirappally

## 4. Achievements

### Students

A team consisting of four mechanical engineering students of GEC Idukki (Akhil S L, Jeesh U G, Sandeep M and Vishnu V.K.T) got first price for the **Hardware Hackathon** event on the global techno entrepreneurial summit held at TKM College of Engineering, Kollam on 23<sup>rd</sup> March 2016.

## 5. Result Analysis

Year of Admission	Semester	Pass percentage
2013	S1 & S2	40.68
	S3	43.10
	S4	52.30
	S5	35.93
2014	S1 & S2	63.00
	S3	57.57
2015	S1	56.45

## 6. Publications

Sl. No.	Authors	Title of the Article	Name of Journal/Conference (with date/place held) Mention Int./National	Vol. No. /Issue No./Page No. [From – To]
1	Yedu G & Sebastian George	Improving financial performance of supply chain in a spice industry	GECIAN 2015 , GEC Idukki	
2	Dr.Manu V Thottackkad & Mr. Joshy Joseph	Tribological property variations of nanolubricants at elevated temperature	GECIAN 2015 , GEC Idukki	
3	Mr.Shafeek M & Mr.Vivek M	Optimisation of property parameters for surface roughness in CNC turning of aluminium	GECIAN 2015 , GEC Idukki	
4	Mr. Jophins Joy & Mr. Francis J Emmatty	Modeling of Multiphase Dispersion and Flashing of Liquid Jets,	GECIAN 2015 , GEC Idukki	526-532