

3084

SRI VENKATESWARA COLLEGE OF ENGINEERING

Department of Electronics and Communication Engineering

Submitted to the Principal for Approval

10.4.17

As part of Faculty Development, it is proposed to conduct a Faculty Development Programme in EC 6703 Embedded and Real Time Systems offered as a core subject for VII Sem ECE students under Anna University, Regulations 2013.

The FDP is certified by the affiliating Anna University and it is planned to be conducted for seven working days at our college during 02/05/2017 to 10/5/2017.

A minimum of 21 sessions covering the entire syllabus needs to be accomodated. It is planned to have 11 External and 10 Internal resource people for handling the technical sessions. The targeted audience would be our faculty and faculty members from various Engineering colleges. A budget of Rs 43000/- is estimated, the break up details are given.

S.No.	Details	Amount in INR
1.	Honorarium & Transport for the External experts [11 sessions]	33,000/-
2.	Banner printing	500/-
3.	Brochure printing and postal charges	1000/-
4.	Biscuits and Tea (For 7 days)	5700/-
5.	Lunch for delegates	2800/-
<b>Total</b>		<b>43000/-</b>

no tea  
2 biscuits  
no lunch

- 8,500  
- 5,000

As per the University norms, the programme is to be conducted for seven days and done at free of cost. Also, Sponsorship from various concerns like M/s Ohmtronics, IAPT and twice from Computer Society of India had been already obtained for conducting other Workshops and conferences.

Hence a sponsorship to a maximum of Rs 5000/- could be obtained and it is requested to permit the remaining amount of Rs 38000/- towards the conduct of FDP.

It will be helpful while taking up NBA Inspection in the recent years. I request you to accept this proposal in the interest of Faculty Development at our college and grant us the fund for the same.

Dr.S.Muthukumar  
10/04/17

Dr.S.Muthukumar  
Convenor & HoD-EC

To:  
HOD-EC  
S. Ganesh  
12/4/17

Have you done AIC Te Grant?

Approved for  
29,500/-  
10/11/2017

To: The Secretary  
The FDP has been approved by AU. Since there is no regn fee, the entire expenditure has to be borne by us. The dept is expecting to get a sponsorship of Rs. 5000/- Submitted for your approval to conduct the FDP pf.

## REGISTRATION FORM

### Faculty Development Training Programme

on

**EC6703 EMBEDDED AND REALTIME SYSTEMS**

**13<sup>th</sup> to 21<sup>st</sup> June 2017**

1. Name:
2. Age and DoB:
3. Designation:
4. Name of the Institution:
5. Institution Affiliated to Anna University:  
Yes/No
6. Address for Communication:
  
7. Official Address:  
E-mail:  
Phone:
8. Subjects Handled in last Two years:
  
9. Professional Experience(in years)  
Industry: Teaching:

Signature of the Applicant

## DECLARATION

The information furnished by me is true to the best of my knowledge. I agree to abide by the rules and regulation governing the FDTP. If selected, I shall attend the program for the entire duration.

Date :

Place :

Signature of the Applicant

## SPONSORSHIP

Dr./Mr./Ms.....

an employee of our institution is hereby allowed to attend the FDTP on "EC6703 Embedded and Real time Systems", approved by Anna University, Chennai. He/She will be permitted to attend the program for the entire duration, if selected.

Signature of the HOD/Principal

Date :

Place :

Registration form can be sent by post/email.

Email/Mobile:  
**menaka@svce.ac.in/ 9655955257**  
**sriivi@svce.ac.in/ 9444438641**  
**kalyani@svce.ac.in / 8248128355**  
**anju@svce.ac.in/9840159602**  
**pmuthu@svce.ac.in/9840523145**  
**rajan@svce.ac.in/9942842979**

SEVEN DAYS FDTP

ON

**EC6703- EMBEDDED AND REAL TIME SYSTEMS**

**13<sup>th</sup> to 21<sup>st</sup> June 2017**

**Co-ordinators**

**Dr. S.Muthukumar & Ms.D.Menaka**



Approved by

**Anna University  
Chennai**

Organized by



**Department of Electronics and  
Communication Engineering  
Sri Venkateswara College of  
Engineering**

(Autonomous - Affiliated to Anna University)  
Pennalur, Sriperumbudur (Tk) - 602 117  
Tamil Nadu, India  
Phone: 044 27152000, Extn: 200

## ABOUT THE COLLEGE

Sri Venkateswara College of Engineering (SVCE), a premier self-financing engineering college was started in the year 1985 and is managed by Sri Venkateswara Educational and Health Trust. The college conducts 10 UG Programmes, 10 PG Programmes in Engineering/Technology. The courses are approved by AICTE and affiliated to Anna University, Chennai. The college is accredited by National Assessment and Accreditation Council (NAAC). The college attained Autonomous status since last academic year. The college is situated in a quiet environment about 37 km from Chennai and situated on Chennai-Bangalore National Highway (NH4) at Pennalur, in Sriperumbudur taluk, Kancheepuram district.

## ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering was started in the year 1985 with an under graduate program in Electronics and Communication Engineering. A PG program in Communication Systems was started in the year 2002 and PG program in Applied Electronics was started in the year 2012. It has strength of around 750 students guided by a team of devoted and diligent faculty members. There are about 44 faculty members in the department, 7 of them being doctorates. The department is equipped with ARM processor, Spartan 3E, Spartan 6, Cadence and Tanner Softwares, ADS and IE3D Simulation softwares and S band Network Analyser. The Department organizes a National Level Student Technical Symposium "UPAGRAHA", a National Level Conference "National Conference on Signal Processing, Communication & Networking (NCSCN)" every year and also organizes Workshops, Seminars and FDPs periodically.

## ABOUT THE FDTP

The FDTP is approved by Anna University, Chennai. All topics in the syllabus of the seventh semester subject, EC6703 - Embedded and Real time Systems will be covered.

## TOPICS TO BE COVERED

- Introduction to Embedded Computing
- ARM Processors, Case studies, CPU Bus and co-processors
- Designing with computing platforms  
Live Demo on a computing platform
- Components of Embedded Program
- Multirate systems
- System Analysis and Architecture Design
- Real time operating systems
- Internet of Things
- Performance Optimization of Embedded computing, Power optimization strategies for processes
- Product Development and Quality Assurance

## REGISTRATION FEE

The course is offered by the Anna University, Chennai with free of cost to the faculty members of Anna University, Chennai and its affiliated colleges.

The registration form can be downloaded from college web site, [www.svce.ac.in](http://www.svce.ac.in). The registration is restricted to 25, with first come first basis. No TA/DA will be provided. The participants can use the college bus for to and fro journey.

## ORGANIZING COMMITTEE

**CHIEF PATRON: Vice-Chancellor,**  
Anna University,  
Chennai.

**PATRON:**  
Dr. S. Ganesan,  
**Registrar,**  
Anna University,  
Chennai.

**CHAIR:**  
Dr. K. Shanthy,  
**Director, CFD**  
Dr. D. Sridharan,  
**Addl. Director, CFD**

**CO CHAIR:**  
Dr. S. Ganesh  
Vaidyanathan,  
**Principal, SVCE**  
Dr. S. Muthukumar  
**HoD - Department of  
Electronics &  
Communication  
Engineering**

## CO-ORDINATORS:

Dr. S. Muthukumar,  
**Professor,**  
Dept of ECE  
Ms. D. Menaka  
**Assistant Professor,**  
Dept of ECE

**VENUE:**  
Video Hall,  
Department of Electronics  
& Communication  
Engineering.

## IMPORTANT DATES:

**Submission of Application : 02-06-2017**

**Intimation of selection : 05-06-2017**

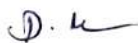
**Confirmation by Participants : 07-06-2017**

**SRI VENKATESWARA COLLEGE OF ENGINEERING**  
**Department of Electronics and Communication Engineering**  
**Anna University approved**  
**Seven Days FDTP on EC6703 - Embedded and Real Time Systems**  
**13<sup>th</sup> - 21<sup>st</sup> June 2017**  
**Session Details**

Sl. No	Date / Day	08.30 AM to 10.00 AM	10.15 AM to 11.45 AM	12.30 PM to 2.00 PM	02.15 PM to 03.30 PM
1	13.06.2017 Tuesday	Registration & Inauguration	Introduction to Embedded Computing-Complex systems and micro processors- Embedded system design process- Model train controller Dr.V.SathieshKumar Assistant Professor,Anna University,MIT Chennai	ARM Processors-Instruction sets preliminaries - ARM Processor – CPU: programming input and output-supervisor mode, exceptions and traps Dr.S.Muthukumar, Professor&Head, ECE Dept., SVCE	Live Demo on Computing platform- Ms.Reethi Srinivasan/ Ms.S.Kalyani/ M.K.Varadarajan AP, ECE Dept., SVCE
2	14.06.2017 Wednesday	Typical issues seen in products deployed in field- Mr.Ashok Govindarajan Technical lead, Sasken Technologies	CPU Bus-Memory devices and systems Dr.P.C.Kishore Raja Professor,ECE Dept. , Saveetha School of Engineering.	Co-processors- Memory system mechanisms - CPU performance- CPU power consumption- Ms.G.Padmavathy Professor,ECE Dept.,SVCE	Structural Description Language- Dr.S.Ganesh Vaidyanathan, Professor and Principal, SVCE
3	15.06.2017 Thursday	Components for embedded programs- Models of programs- Assembly, linking and loading – compilation techniques- Program level performance analysis- Dr.P.Jothilakshmi,Prof,E CE Dept.,SVCE	Designing with computing platforms and Platform-level performance analysis- Dr.Avudaiammal Prof, ECE Dept. , St.Joseph college of Engg	Introduction to Processes- Dr.R.Gayathri Assoc Prof, ECE Dept., SVCE	Live Demo on Computing platform- Ms.Reethi Srinivasan/ Ms.S.Kalyani/ M.K.Varadarajan AP, ECE Dept., SVCE
4	16.06.2017 Friday	Power Optimization- power optimization strategies for processes - Dr.S.R.Malathy, Assoc Prof, ECE Dept., SVCE	RTOS-Example Real time operating systems- POSIX- Windows CE Dr.B.Priya Assoc Prof, ECE Dept., REC,Chennai	System analysis and architecture design-  Ms.R.Kousalya, AP, ECE Dept., SVCE	CASE STUDY- Data compressor - Alarm Clock Ms.D.Menaka, AP, ECE Dept., SVCE

5	19.06.2017 Monday	System Design Techniques-Design flows - Requirement Analysis - Specifications Mr.Venkatramaiah,AP, ECE Dept. , SMIT, Chennai	Performance optimization of embedded computing- Software performance optimization - Program level energy and power analysis and optimization - Analysis and optimization of program size- Program validation and testing- Mr.P.Arul, AP, ECE Dept., SVCE	Scheduling Algorithms- Priority based scheduling- Interprocess communication mechanisms Ms. T.J. Jeyaprabha AP, ECE Dept., SVCE	Evaluating operating system performance- Ms.K.Srividhya,AP, ECE Dept., SVCE
6	20.06.2017 Tuesday	CASE STUDY- Telephone answering machine-Engine control unit -Ms.B.Sarala. AP, ECE Dept., SVCE	Product Development & Quality Assurance techniques- Mr.V.Senthil Kumar Lead Engineer, Mahindra Research Valley, Mahindra and Mahindra Pvt. Ltd	CASE STUDY-Audio player, Video accelerator- Dr.G.A.Sathish Kumar,Prof, ECE Dept., SVCE	Operating systems-Introduction - Multiple tasks and multiple processes - Multirate systems- Preemptive real-time operating systems Ms.G. Janakasudha, AP,CSE Dept,SVCE
7	21.06.2017 Wednesday	IOT & Consumer Electronics Architecture- Dr.Vijayarajeswaran- VI Microsystems Pvt. Ltd	IOT & Consumer Electronics Architecture- Dr.Vijayarajeswaran- VI Microsystems Pvt. Ltd	CASE STUDY- Software modem- Digital still camera - Ms.L.Anju, AP, ECE Dept., SVCE	Valedictory Function

  
DR.S.MUTHUKUMAR, HoD/ECE  
FDTP COORDINATOR

  
MS.D.MENAKA, AP/ECE  
FDTP COORDINATOR

### BIO DATA

**Senthil Kumar** has 14 years of experience in the automotive domain. He is working as Lead Engineer in Mahindra Research Valley, Mahindra & Mahindra Ltd. He is expertise in multiple product development like Engine control unit, Instrumental Cluster, Body Control Module & Telematics Development. He worked with client for the product development, Validation and complete product development life cycle.

Previously, Senthil worked for Robert Bosch Engineering Solution & Ashok Leyland.

Apart from 7years experience, he has filed 3 Patents in Vehicle Diagnostics and auto recovery of communication channel failure. He Published a paper in an International Journal & presented in 3 international Conferences.

He has received many awards and appreciations for his dedication. He is awarded with Mahindra's top Rise Award for the successful launch of DiGiSENSE.

He graduated with M.Tech., from SRM University in Embedded System Technology and M.Sc Electronics from Bharathidhasan University.

Mr. S.B. Senthil Kumar

Lead Engineer, Department of Infotronics Technology Automotive & Farm Sectors, Mahindra Research Valley, Mahindra and Mahindra Pvt. Ltd

S.Kalyani  
(S.KALYANI)

Dr.S.Muthukumar  
HoD | ECE

## REGISTRATION FORM

### Faculty Development Training Programme

on

EC6703 EMBEDDED AND REAL TIME SYSTEMS

13<sup>th</sup> to 21<sup>st</sup> June 2017

1. Name: P. RANJANI
2. Age and DoB: 26 & 17/19/1990
3. Designation: ASSISTANT PROFESSOR
4. Name of the Institution: M. KUMARASAMY COLLEGE OF ENG.
5. Institution Affiliated to Anna University: Yes/No  
Yes
6. Address for Communication: P. RANJANI  
M. KUMARASAMY COLLEGE OF ENG. AP/EEE  
THALAVAPALAYAM, KARUR
7. Official Address: MKLE, KARUR  
E-mail: ranjanip.eee@mkce.ac.in  
Phone: 8508429847
8. Subjects Handled in last Two years: DLC,  
LIC, EDC, M&I, EMT
9. Professional Experience(in years)  
Industry: Teaching: 4 years

  
Signature of the Applicant

## DECLARATION

The information furnished by me is true to the best of my knowledge. I agree to abide by the rules and regulation governing the FDTP. If selected, I shall attend the program for the entire duration.

Date: 13/5/17

Place: KARUR

  
Signature of the Applicant

## SPONSORSHIP

Dr./Mr./Ms. P. RANJANI

an employee of our institution is hereby allowed to attend the FDTP on "EC6703 Embedded and Real time Systems", approved by Anna University, Chennai. He/She will be permitted to attend the program for the entire duration, if selected.

  
Signature of the HOD/Principal

Date: 13/5/17

Place: KARUR

Registration form can be sent by post/email.

Email/Mobile:  
menaka@svce.ac.in/ 9655955257  
srivi@svce.ac.in/ 9444438641  
kalyani@svce.ac.in / 8248128355  
anju@svce.ac.in/9840159602  
pmuthu@svce.ac.in/9840523145  
rajan@svce.ac.in/9942842979

## SEVEN DAYS FDTP

ON

EC6703- EMBEDDED AND REAL TIME SYSTEMS

13<sup>th</sup> to 21<sup>st</sup> June 2017

Co-ordinators

Dr. S.Muthukumar & Ms.D.Menaka



Approved by

Anna University  
Chennai

Organized by



Department of Electronics and  
Communication Engineering  
Sri Venkateswara College of  
Engineering

(Autonomous - Affiliated to Anna University)  
Pennalur, Sriperumbudur (Tk) - 602 117  
Tamil Nadu, India  
Phone: 044 27152000, Extn: 200

# SRI VENKATESWARA COLLEGE OF ENGINEERING

Department of Electronics and Communication Engineering

Anna University approved

Seven Days FDTP on EC6703-Embedded and Real Time Systems  
13<sup>th</sup>-21<sup>st</sup> June, 2017

## A Report


The Department of Electronics and Communication Engineering organized Seven Days Faculty Development Training Programme on **EC6703 - Embedded and Real Time Systems** from 13<sup>th</sup>-21<sup>st</sup> June 2017 approved by Centre for Faculty Development, Anna University, Chennai. The Programme was inaugurated by Dr.V.SathieshKumar, Assistant Professor, MIT, Chennai. He delivered an introductory talk on Embedded Systems and System Design Process with various real time scenarios wherein the area of Embedded systems play a vital role.

A total of 24 lecture sessions and 2 laboratory sessions covering all the major topics as prescribed by Anna University for the subject 'EC6703-Embedded and Real Time Systems' were conducted (List enclosed). These technical lectures and laboratory classes were handled by the experts invited from various institutions, industries and also senior faculty members of the host college.

The Faculty Development Training Program was intended to provide an opportunity to faculty members employed in institutions affiliated to Anna University for upgrading their knowledge in the area of Embedded Systems. The FDTP was conducted with 19 external participants in and around TamilNadu and 6 internal participants (List enclosed).

The program provided an insight to the recent updates and current technologies prevailing in the industry which was touched upon by the industrial experts. The participants provided a positive feedback about the sessions handled by both the academic and industrial experts. The practical sessions were also helpful to the participants to understand the applications of Embedded Systems.

We would like to express our gratitude to Anna University for providing us approval to conduct the workshop. We also express our heartfelt thanks to our management and the Principal for their supports including financial assistance for the conduct of the programme.

  
Dr.S.Muthukumar,  
FDTP Coordinator,  
Professor & Head,  
ECE Dept.  
SVCE

Head of the Department  
Electronics and Communication Engineering  
Sri Venkateswara College of Engineering  
Sriperumbudur - 602 117, India

  
Ms.D.Menaka  
FDTP Coordinator,  
Assistant Professor,  
ECE Dept.  
SVCE



**Lecture by Dr.R.Vijayarajeswaran,Managing director,VI Microsystems**



**Feedback by a Participant**



**SRI VENKATESWARA COLLEGE OF ENGINEERING**  
**Department of Electronics and Communication Engineering**

Anna University approved

**Seven Days FDTP on EC6703 - Embedded and Real Time Systems**  
**13<sup>th</sup>-21<sup>st</sup> June, 2017**

List of Participants

**External Participants**

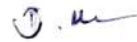
S.No	Participant Name	Designation	College Name
1	Mr.K.Karthick	Assistant Professor	Rajalakshmi Engineering College
2	Ms.K.Banumathi	Assistant Professor	Panimalar Institute of Technology
3	Ms.D.Jothi	Associate Professor	RMK Engineering College
4	Ms.P.Latha	Associate Professor	RMK Engineering College
5	Ms.M.Rhevathi	Assistant Professor	RMK Engineering College
6	Ms.P.Ranjani	Assistant Professor	M Kumarasamy College of Engineering
7	Ms.S.K.Saranya	Assistant Professor	M Kumarasamy College of Engineering
8	Mr.S.Karthik	Assistant Professor	Kumaraguru College of Technology
9	Mr.Timothy Dhayakar Paul	Assistant Professor	Kumaraguru College of Technology
10	Mr.G.Tony Santhosh	Assistant Professor	Alpha College of Engineering
11	Mr.A.Ravindiran	Assistant Professor	Sri Sairam Institute of Technology
12	Mr.Ramaprasad Maharana	Assistant Professor	Sri Sairam Institute of Technology
13	Ms.Kalaipriya. O.Saravanan	Assistant Professor	Saveetha Engineering college
14	Ms.Elizabeth.J.C	Assistant Professor	Saveetha Engineering college
15	Ms.Subhashini.S	Assistant Professor	Saveetha Engineering college
16	Ms.C.P.Gowthami	Assistant Professor	GRT Institute of Engg. and Technology
17	Ms.R.Bamalakshmi	Associate Professor	GRT Institute of Engg. and Technology
18	Mr.M.S.Ganeshmurthy	Assistant Professor	Sri Venkateswara College of Technology
19	Mr.D.Anand	Assistant Professor	K.L.N.College of Engineering

## Internal Participants

S.No	Participant Name	Designation	College Name
1	Ms.K.S.Pavithra	Assistant Professor	Sri Venkateswara College of Engineering
2	Ms.S.Sinthamani	Assistant Professor	Sri Venkateswara College of Engineering
3	Ms.S.Reethi	Assistant Professor	Sri Venkateswara College of Engineering
4	Ms.A.Bharathipriya	Assistant Professor	Sri Venkateswara College of Engineering
5	Mr.R.Nagaraj	Assistant Professor	Sri Venkateswara College of Engineering
6	Mr.S.P.Sivagnana Subramaniam	Assistant Professor	Sri Venkateswara College of Engineering



DR.S.MUTHUKUMAR, HOD/ECE  
FDTP COORDINATOR



MS.D.MENAKA, AP/ECE  
FDTP COORDINATOR

# CENTRE FOR FACULTY DEVELOPMENT

Anna University, Chennai-600025.

FACULTY DEVELOPMENT TRAINING PROGRAMME - Summer Vacation-2017

## FEEDBACK FORM

Title of the Programme

EC6703- Embedded & real time systems

Duration

13<sup>th</sup> June to 21<sup>st</sup> June 2017

1. Name & Designation

K. Banumathi

2. Name of the College

Panimalar Engineering College

3. No. of Resource Persons

Internal : 18

External : 8

4. Comments about the following : (Please tick the relevant box e.g. 5 - highest, 1 - lowest)

i. Subject content

5 4  3 2 1

ii. Coverage of syllabus

5 4  3 2 1

iii. Technical Presentation by Internal Faculty

5 4 3  2 1

iv. Technical Presentation by External Faculty

5 4  3 2 1

v. Course Materials Supplied

5 4 3  2 1

vi. Tutorials

5 4  3 2 1

vii. Laboratory facilities / Site visit

5 4 3  2 1

5. Level of Excellence and Academic Standards of FDTP

i. Ability to Identify, formulate and solve the problems

5  4 3 2 1

ii. Ability to use IT techniques and Tools to Deliver Lecturer

5  4 3 2 1

6. Developed new skills / improved the ones had already

5 4 3  2 1

7. The example and practical exercises helped to understand

5  4 3 2 1

8. Reception & Hospitality

5 4  3 2 1

9. Accommodation & Catering

5  4 3 2 1

11. Opinion / Suggestion / Effectiveness of the course :

K.B

Signature of the Participant

Date : 21/6/17



**CENTRE FOR FACULTY DEVELOPMENT**  
**ANNA UNIVERSITY**  
**CHENNAI - 600 025**



*This is to certify that Dr. / Mr. / Ms. D.Anand, A.P.....  
K.L.N College of Engineering, Madurai.....  
has participated in the Faculty Development Training Programme  
on EC 6703- Embedded & Real time systems.....  
at Sri Venkateswara College of Engg, Kanchipuram  
from 13<sup>th</sup> to 21<sup>st</sup> June 2017.*

**Director**  
**Centre for Faculty Development**

**Registrar**  
**Anna University**