

Foundation for Innovation and Technology Transfer (FITT)
In association with
Airtel IIT Delhi Centre of Excellence in Telecom-AICET
Indian Institute of Technology Delhi

Announcement

CERTIFICATE
COURSE
ON
EMBEDDED
SYSTEMS AND
APPLICATIONS

Duration:

Basic Course Module (Week 1): Feb 20 - 24, 2012
Special Topics and Applications (Week 2):
Feb 27 - Mar 02 2012

HIGHLIGHTS

- Distinguished Faculty from various departments of IIT Delhi.
- Covering the technology of Embedded Systems and its applications.

Indian Institute of Technology Delhi

IIT Delhi, established in 1963, is one of the seven Institutes of Technology in India created as centers of excellence for teaching, research and development in engineering, science and technology. Activities of the institute encompass 13 academic departments and 10 centres of research in various disciplines of engineering and science.

Foundation for Innovation and Technology Transfer (FITT) at the IIT Delhi

The Indian Institute of Technology Delhi took the lead in setting up the Foundation for Innovation and Technology Transfer (FITT) in 1992 with a view to achieving a quantum jump in the level of interaction and collaboration with industry on programmes and projects of mutual interest.

FITT is an autonomous registered society and interface organisation to provide single window service to industry, drawing upon IIT Delhi as the primary resource. The focus of activities in FITT is technology transfer, technology development, continuing education, research partnership with industry and information support services.

Airtel IIT Delhi Centre for Excellence in Telecommunication (AICET) at the IIT Delhi

The Airtel IIT Delhi Centre for Excellence in Telecommunication functions as a part of the Bharti School of Telecommunication in IIT Delhi. The Bharti School is the first school conceptualized and created in IIT Delhi. With over 30,000 sq. ft. of space and three major laboratories, it hosts some of the most popular Engineering and Management programmes on campus.

The Telecom Centre of Excellence has the mandate to perform industry driven contract research, to create and licence IPR, to conduct telecom industry-specific learning programmes, to provide incubation facilities and to act as a super-internship node.

Academic Coordinators

Dr. Subrat Kar, Electrical Engg. Deptt, IIT Delhi
Dr. Brejesh Lall, Electrical Engg. Deptt, IIT Delhi

Course Faculty

Dr. Santanu Chaudhury, Electrical Engg. Dept., IIT Delhi
Dr. Subrat Kar, Electrical Engg. Deptt., IIT Delhi
Dr. I. N. Kar, Electrical Engg. Deptt., IIT Delhi
Dr. S. M. K. Rahman, Centre for Biomedical Engg., IIT Delhi
Dr. Brejesh Lall, Electrical Engg. Deptt., IIT Delhi

Background of the Course

Embedded systems have become the next inevitable wave of technology, finding application in diverse fields of engineering. The PC monolith has broken down; concentrated "core" elements of computing and communication, sensors and actuators have become embeddable in almost everything. Technologies that are inexpensive, low-power, and radically different from classical chip-and-pc-board variety are leading to newer applications and products.

The goal of this course is to impart training to interested final year students/ graduate engineers with basic background in Hardware & Software, in specialized area of Embedded Systems so that they can develop expertise in developing and deploying embedded systems for Telecom and Multimedia applications.

The foundation modules of the course will provide an exposure to a gamut of technologies associated with embedded systems. Advanced modules will cover a large number of the relevant enabling technologies and applications of embedded systems.

Eligibility

- Aggregate 60% marks or above in a Graduate degree (4 year BE/B.Tech. or M.Sc) in Electronics/ Electrical Engineering/Computer Science & Engineering/ Electronics Engineering & Telecommunication/Instrumentation or Master of Computer Applications (MCA).
- It is essential to have proficiency in C/C++ and Java, exposure to Computer Architecture, Operating Systems, Computer Networks.
- This course is meant for final year undergraduate / postgraduate students.

Course Modules

The course modules are given below. Each module will be conducted through several sessions of theory classes (each of 1 hour 30 minutes duration) as given below. The total contact hours are over 15 hours / week.

Course modules are:

Basic Module: Week 1: Feb 20 Monday – Feb 24 Friday 2012

- Session 1: Introduction to Embedded Systems, UML, Embedded OS
- Session 2: Architectures-I : 8-bit
- Session 3: Architectures-II : 16/32-bit
- Session 4: Architectures-III : DSP
- Session 5: Buses, interfacing, FPGAs, co-design

Special Topics & Applications: Week 2: Feb 27 Monday – Mar 02 Friday 2012

1. Session 1: Special modules on applications to Image Processing
2. Session 2: Special modules on applications to Control
3. Session 3: Special modules on applications to biomedical applications
4. Session 4: Special modules on applications to DSP
5. Session 5: Special modules on applications to telecom

Course coverage will include

- Architecture of processors: PIC, ARM, DSP and SoC Architectures
- Interfacing issues
- Software design and programming for embedded systems
- UML based embedded design methodology
- Internet enabled and networked embedded systems
- Telecom appliances including sensors and wireless devices for system like WiMax, 3GPP LTE and Bluetooth.
- Telecom and Multimedia applications on popular platforms
- Multimedia coding techniques and implementation on embedded systems

Course Structure and Duration

The course consists of theory classes spread over a period of 2 weeks. The theory classes will be conducted on IIT- Delhi in the evenings for 3 hours (6:30 to 9:30 PM) on weekdays.

The course duration will be from Feb 20-24, 2012 (Basic Course) and Feb 27-Mar 02, 2012 (Special Topics and Applications).

Course Fee

Fee for the Basic Course Module (Week 1) is Rs. 7500/- (Rupees Seven Thousand Five hundred only) and Rs. 7500/- (Rupees Seven Thousand Five Hundred only) for the Special Topics & Applications Module (Week 2).

Applicants opting for both modules need to pay Rs. 12000/- only instead of Rs. 15000/-

Course Material

Each candidate will be provided a course kit.

Selection Process

The course is limited to 70 participants. A Selection Board comprising IIT Delhi faculty may interview applicants shortlisted on the basis of prior performance and background. The decision of the Selection Board regarding selection of candidates will be final.

The brochure and application form for the course will be available on the Net at FITT and IIT Delhi websites: www.fitt-iitd.org, www.iitd.ernet.in or in person from FITT office. Completed form along with the Application fee of Rs. 100/- in cash or by a demand draft drawn in favour of "FITT, IIT Delhi" should be submitted to FITT office before 4:00 PM, Monday, Feb. 13, 2012

Evaluation and Certification

At the end of the course, those completing the course successfully will receive a Certificate from FITT signed by MD, FITT and course coordinators from IIT Delhi.

Schedule:

- Application form available from:
Jan 13, 2012
- Last date for submission of completed forms along with application fee (Rs. 100):
Monday, Feb. 13, 2012
- Display the list of selected candidates :
Wednesday, Feb. 15, 2012
- Schedule of fees Payment :
Before 4:00 PM on Friday, Feb. 17, 2012

- Commencement of the course:
Monday, Feb 20, 2012

Please Note:

1. No accommodation facility will be arranged on IIT campus for the students of this course.
2. If the course is not held for any unavoidable reason, the course fee deposited will be returned.

However, if a candidate leaves the course on his own, the fee deposited will not be refunded.

For further information please contact/mail to:

**Mr. K. K. Roy, Sr. Manager (Tech./Admn.)
Foundation for Innovation and Technology Transfer
Indian Institute of Technology (IIT)
Hauz Khas, New Delhi – 110016**

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Group Email:

**fitt_embedded@yahoo.co.in,
fittembsys@yahoogroups.com,**

Web site: <http://www.fitt-iitd.org>,
<http://www.iitd.ac.in/>,
<http://groups.yahoo.com/group/fittembsys>

FAQ : Frequently Asked Questions

1. *PLACEMENT*

1.1 *Will IIT Delhi guarantee placement to participants?*

No. We do not guarantee job placement but we will try to help by informing Industry partners about you.

2. *QUALIFICATION*

2.1 *I am in my final year of B.Tech/B.E/M.Sc. Can I join ?*

Yes, But if you are in your 3rd year (pre-final) and you apply to us with the details of the course(s)/projects you have completed and your performance in those course(s), we may be in a better position to consider your case. While we don't encourage undergraduates who have inadequate background preparation for the course, we would make every effort to accommodate an exceptional candidate.

2.1 *I did not do a BE/BTech degree. Can I join?*

The courses you have done are more important than the formal degree you have received. Specifying a BE/BTech/ MSc(Electronics) degree is one way of ensuring that you have done courses in Computer Architecture, Operating Systems, Digital Hardware Design, Programming and Computer Networks. If you have any other degree, and still consider yourself prepared for this course, please let us have an opportunity to see the courses (closest to the above areas) you have done - send us the course titles, contents and your performance.

3. *FEES*

3.1 *Can I test my preparedness for the course by paying a fraction of the fees and sitting for the first few classes ?*

No. The logistics of running the course require that we know the number of participants in advance, Classrooms have to be booked, experimental setups have to be prepared - we need to know the actual number of participants well in advance.

4. *CERTIFICATION*

4.1 *What will I receive at the end of the course?*

You will get a Certificate of Completion from the FITT signed by the MD, FITT and the Coordinator of the Course.

5. *COURSE DESCRIPTION*

5.1 *What sort of practical experience is provided in this course ?*

There are no lab classes in this course.

5.2 *How can I get a neutral opinion about the course?*

We run an email list consisting of all the earlier participants of the course. You can email your question to fittembsys@yahoogroups.com .

5.3 *What is the Foundation of Innovation and Technology Transfer ? Is it a part of IIT Delhi ?*

A small description of FITT and its objectives appears at the beginning of this document. You can see their homepage www.fitt-iitd.org.

CERTIFICATE COURSE ON EMBEDDED SYSTEMS & APPLICATIONS

APPLICATION FORM¹

Photo (digitized photos are acceptable at minimum 1200 DPI resolution)

The last date for submitting the completed form is Monday, Feb. 13 2012- Please return the completed form to :**Foundation for Innovation and Technology Transfer (FITT), Deans' Complex, 1st Floor, Main Building, IIT Delhi, Hauz Khas, New Delhi - 110016**).

1	Name			
		<i>Surname</i>	<i>Middle Name</i>	<i>First Name</i>
2	Guardian's Name:			
		<i>Surname</i>	<i>Middle Name</i>	<i>First Name</i>
3	Date of birth			
		<i>Day</i>	<i>Month</i>	<i>Year</i>


1	Mailing address			
		<i>City</i>	<i>PIN Code</i>	<i>State</i>
	Telephone(s) -Home:		Mobile:	Fax:
	Email(s):			

1	Educational Qualifications:				
	Certificate / Degree with Discipline	Board / Institute / College & University	% Marks / CGPA	Div. / Class / Grade	Year of passing
<i>Class 10</i>					
<i>Class 12</i>					
<i>Graduate</i>					
<i>Post-grad</i>					

1	Work experience (if any)	Experience			
	Name of Firm	Location	From (Month,Year)	To (Month, Year)	Total
	Present				
	Past				

1	Background / knowledge in Hardware and Software	Hardware	
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¹ This application form is available as a RTF file on www.fitt-iitd.org and <http://groups.yahoo.com/fitembsys/files> . Please download and fill using Microsoft Word without changing fonts and formatting. Submit hardcopies only (print both pages on two sides of one A4 page) along with the application fee of Rs.100/- either in cash or by DD payable to "FITT, IIT Delhi". Digitized photographs are acceptable only at resolutions ≥ 1200 DPI

	Software	•
1	Any formal training/ education after the first degree	•
2	Why do you want to do this course? (restrict your point-wise answer to 8 lines maximum) ?	•
3	Documents required with completed application form (please check )	<input type="checkbox"/> Application fee of Rs. 100 by DD payable to "FITT, IIT Delhi" or cash, along with this completed application form. <input type="checkbox"/> Attested photocopies of Degree/Provisional Certificate(s) inclusive of percentage of aggregate of marks (please reduce all certificates to A4 page size while photocopying) <input type="checkbox"/> Attested photocopies of marksheets for all courses taken during the engineering/IT degree. <input type="checkbox"/> Candidates working in industry must produce 'No objection certificate' from their employer if selected. <input type="checkbox"/> One recent passport size photo pasted / digitally inserted on the front page of the application form.

1	Fees	<ul style="list-style-type: none"> ▪ Fees are to be paid as per schedule given below only by Demand Draft payable to 'FITT, IIT Delhi'. ▪ Fees are non-refundable if the participant leaves the course. ▪ <u>Schedule of fees Payment</u> : Before 4:00 PM on Friday, Feb. 17, 2012
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1	Course duration	<p>WEEK 1 : Feb 20, 2012 – Feb 24, 2012</p> <p>WEEK 2 : Feb 27, 2012 – March 02, 2012</p>
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THERE WILL BE NO ACCOMMODATION AVAILABLE FOR ANY OF THE PARTICIPANTS OF THIS COURSE ON IIT DELHI CAMPUS.

I have read and agreed to all the above conditions including the fees payment schedule.

Place:
Date:

Signature:
Name in capitals: