

## Introduction

Islamic University of Technology (IUT), a subsidiary organ of the Organisation of Islamic Cooperation (OIC), is mandated to develop human resources of the OIC member states in the fields of engineering, technology, and technical education. The objectives of IUT, therefore, include imparting technical knowledge at various levels, upgrading skills, conducting research, and sharing specialized technical expertise among the member states of the OIC. Furthermore, the roadmap of the OIC recommends minimizing the digital gap among the member states.

With a view to achieving the aforementioned objectives, the Computer Science and Engineering (CSE) Department has been organizing a workshop every year since its inception. In this sequel, the CSE Department is organizing a workshop on “*Embedded Software Development*” to be held during 5-9 December, 2016 at IUT campus.

## Course Objectives

Embedded software is a computer program written to control machines or devices that are not typically thought of as computers. Embedded software development is a prominent and growing field in IT. Today every device or gadget comes with an embedded component. Smart phones and smart TVs have made the use of embedded system a norm in daily life. Autonomous cars have lifted the ambition to the apex. Robots, bots and drones are being made available to children as their toys. All these devices have some kind of embedded software in it. The performance of these devices depends on the quality of the hardware and the efficiency of the embedded software. So, it has become essential for us to understand the development of embedded software. There is a high demand for skillful embedded software system

developer and it is clearly visible that there is a huge scope of work in the domain.

However, small embedded devices come with huge challenges. To become an embedded software engineer one must have sound knowledge of the hardware. He must have good algorithm for programming in constrained environment. Programming and debugging for embedded software is another major issue, as software is programmed on PC but deployed and executed on the devices. Thanks to the big vendors who have made embedded programming easy by providing different platforms and programming models.

The goal of this course is to provide an introduction to embedded software development in different environments. The participants will have tutorial sessions on how to develop small embedded applications on mobile, on sensor, on embedded processors.

## Course Outline

The topics of the course may include but not limited to:

- Mobile Software Development
- Arduino Based Embedded Programming
- Real Time Embedded Systems
- Embedded Systems and IoT
- Sensor Programming
- Embedded Image Processing
- Embedded Software Testing
- 8086 Based System Programming
- Advanced Topics such as BCI Headsets.



## Medium of Instruction

The medium of instruction for the workshop will be English.

## Participants

The workshop is meant mainly for the computer personnel, teachers, students, practitioners, and experts in the ICT field. The participants should have graduation/diploma degree with sufficient knowledge in the field of Information and Communication Technologies.

## Arrangement

The participants will be provided with course materials and food at IUT campus. Transportation between Hazrat Shahjalal International Airport, Dhaka and IUT will be available for the expatriates. IUT will provide accommodation in its campus dormitory depending on the availability if requested in advance. All other expenses shall have to be borne by the participants themselves or their nominating authorities.

## Venue and Climate

The workshop will be held in the premises of IUT campus at Board Bazar, Gazipur, Bangladesh, about 30 km north of Dhaka city and 13 km from the Airport. Bangladesh is a beautiful country with meandering rivers and canals. It has mighty rivers, royal Bengal tigers, and a rich cultural heritage. The weather during December is generally mild, and the temperature ranges from 14<sup>o</sup> to 25<sup>o</sup> C. Additional information on the IUT campus is available at the website [www.iutoic-dhaka.edu](http://www.iutoic-dhaka.edu)

## VISA and Travel Information

Participants are requested to arrange their visas from Bangladesh Embassy or High Commission in their respective countries. If there is no Bangladesh Mission in your country, please send the scanned copies of first 4 pages of your passport to process the visa at entry in Bangladesh. It may be noted here that getting visa at the entry is difficult and may be refused. The type of visa generally issued for short courses, workshops and conferences is tourist visa. For further inquiry regarding visa, please contact Md. Nahidul Islam Prodhana, Assistant Protocol Officer, IUT, E-mail: n.islam@iut-dhaka.edu; protocol@iut-dhaka.edu; Cell: +880-1717138354

## Resource Persons

- **Prof. Dr. M. A. Mottalib**  
Head, CSE Dept., IUT
- **Dr. Md. Kamrul Hasan**  
Associate Professor, CSE Dept., IUT
- **Dr. Md. Hasanul Kabir**  
Associate Professor, CSE Dept., IUT
- **Dr. Abu Raihan Mostofa Kamal**  
Associate Professor, CSE Dept., IUT
- **Dr. Md. Motaharul Islam**  
Assistant Professor, CSE Dept., IUT
- **Dr. Akramul Azim**  
Assistant Professor, Department of Electrical, Computer and Software Engineering  
University of Ontario Institute of Technology,  
Canada

## Nominations

The interested participants have to fill in the prescribed Application Form available at the IUT website. Also, each applicant willing to participate should send (by e-mail or postal mail) the filled application approved by the respective home

institution authority to the course coordinator by **November 15, 2016**. Early application is encouraged.

## Registration

The participant will have to register for the course in the morning of 5 December 2016 at the CSE department, IUT. The registration fee for the workshop is Tk. 4,000 for local participants and US\$ 200 for expatriate participants.

## Chief Patron

- **Prof. Dr. Munaz Ahmed Noor**  
Vice-Chancellor, IUT

## Course Officials at IUT

- **Prof. Dr. M. A. Mottalib**  
Head, CSE Dept.  
Course Coordinator
- **Hasan Mahmud**  
Assistant Professor  
Member
- **Dr. Md. Kamrul Hasan**  
Associate Professor  
**Course Organizer**

## Contact Address

All inquiries concerning the workshop should be addressed to:

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## Workshop on Embedded Software Development 05-09 December 2016



Organized  
by

**Department of Computer Science and  
Engineering (CSE)**

**Islamic University of Technology (IUT)**

A subsidiary organ of the  
Organisation of Islamic Cooperation (OIC)  
Board Bazar, Gazipur, Bangladesh

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