CENTRAL UNIVERSITY OF KERALA
केरल केन्द्रीय विश्वविद्यालय

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF MATHEMATICAL AND PHYSICAL SCIENCES

Minutes of BOS in Computer Science Held on 09 July 2016 at 11.00 AM

Agenda: To discuss about the Syllabus, feedback of students, previous question papers, evaluation strategies

The following members were present during the meeting.

1. Dr. P. S. Hiremath, Professor, KLE Technological University
2. Dr. Rajesh R.
3. Dr. T.M. Thasleema
4. Mr. Ragesh N.K., Specialist, DSP & Multimedia, Tata Elxsi Ltd., Thiruvananthapuram
5. Mr. Fasil O.K., Software Engineer, NuCore Software Solutions

1) The BOS members have gone through the previous syllabus and current syllabus. The BOS observes the improvement in the curriculum/syllabus. The BOS members also suggested to include some industry related electives. The BOS approved the syllabus.
2) The feedback of 2014-16 batch students and 2015 admitted students were obtained. The BOS members has gone through the measures taken by the Faculty Council and approved the same.
3) The BOS members has gone through the previous question papers. The BOS members also verified (i) whether the question paper covers the entire syllabus, (ii) whether the question papers are upto the mark, (iii) whether the evaluation strategies of the answer papers are good. The BOS members were satisfied with procedures for the same.

Dr. P. S. Hiremath

Dr. Rajesh R.

Dr. T.M. Thasleema

Mr. Ragesh N.K.

Mr. Fasil O.K.

कंप्यूटर विज्ञान विभाग
केरल केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF KERALA
कासरगोड / KASARAGOD
पेरिया / Periye - 671316
Department of Computer Science

CENTRAL UNIVERSITY OF KERALA
DEPARTMENT OF COMPUTER SCIENCE
M.Sc. COMPUTER SCIENCE

ELECTIVE COURSE					
COURSE CODE	COURSE TITLE	CONTACT HRS/WEEK			CREDITS
		LEC	LAB	TUT	
CSC5009	Embedded Systems	2	2	1	4

Lec = Lecture, Tut = Tutorial, Lab = Practical

This is a participatory and experimental **skill development course**.

Course Objective:
The objective of the course is to provide theoretical and practical aspects of embedded systems.

By completing this course, students will obtain the following course/learning outcomes:
1. Knowledge gained:
   (i) fundamental concepts of embedded systems.
2. Skill gained:
   (ii) Critical analyzing and logic skills in developing embedded codes.
3. Competency gained:
   (iii) Development of embedded systems for a variety of real world problems

Prerequisites: Basic knowledge of electronic components and programming

Grading:

Lab implementation	– 15%
Participatory based group Project	– 10%
Assignment/Quiz/presentation	– 5%
Class Test	– 10%
Final Exam	– 60%

CSC5009 – Embedded Systems

Module 1
Introduction to Embedded Systems: Embedded Systems, Processor Embedded into a System, Embedded Hardware Units and Devices in a System, Embedded Software, Complex System Design, Design Process in Embedded System, Formalization of System Design, Classification of Embedded Systems

Module 2
8051 and Advanced Processor Architecture: 8051 Architecture, 8051 Micro controller Hardware, Input/output Ports and Circuits, External Memory, Counter and Timers, Serial data Input/output, Interrupts, Introduction to Advanced Architectures, Real World Interfacing, Processor and Memory organization - Devices and Communication Buses for Devices Network: Serial and parallel Devices & ports, Wireless Devices, Timer and Counting Devices, Watchdog Timer, Real Time Clock, Networked Embedded Systems, Internet Enabled Systems, Wireless and Mobile System protocols

Module 3
Real – Time Operating Systems: OS Services, Process and Memory Management, Real – Time Operating Systems, Basic Design Using an RTOS, Task Scheduling Models, Interrupt Latency, Response of Task as Performance Metrics - RTOS Programming: Basic functions and Types of RTOSES, RTOS VxWorks, Windows CE

Module 4
Embedded Software Development Process and Tools: Introduction to Embedded Software Development Process and Tools, Host and Target Machines, Linking and Locating Software, Getting Embedded Software into the Target System, Issues in Hardware-Software Design and Co-Design - Testing, Simulation and Debugging Techniques and Tools: Testing on Host Machine, Simulators, Laboratory Tools

Text Book:
1. Raj Kamal, *Embedded Systems*, Second Edition TMH, 2008
Reference:
1. K.V.K.K.Prasad, *Embedded/Real-Time Systems*, dreamTech press, 2003
2. Muhammad Ali Mazidi, *The 8051 Microcontroller and Embedded Systems*, Pearson, 2007
3. Kenneth J. Ayala, Thomson, *The 8051 Microcontroller*, Third Edition, 1997
4. David E. Simon, *An Embedded Software Primer*, Pearson Education, 2005
5. Ajay V Deshmukhi, *Micro Controllers*, TMH, 2005
6. Raj kamal, *Microcontrollers*, Pearson Education, 2009
7. Shibu K.V, *Introduction to Embedded Systems*, TMH, 2009