




**JNAN VIKAS MANDAL'S**  
Mohanlal Raichand Mehta College of Commerce  
Diwali Maa College of Science  
Amritlal Raichand Mehta College of Arts  
Dr. R.T. Doshi College of Computer Science  
NAAC Re-Accredited Grade 'A+' (CGPA : 3.31) (3rd Cycle)

Date: 04/12/2023

**NOTICE**

All Students are hereby informed that the department of CS is arranging a Certificate Course from 6<sup>th</sup> December 2023 to 12<sup>th</sup> December 2023.

  
Mrs. Janhavi Kshirsagar  
Co-ordinator CS-IT Dept

  
Dr. B.R. Deshpande



I/c Principal  
I/c. PRINCIPAL  
JNAN VIKAS MANDAL'S  
M.R. MEHTA COLLEGE OF COMMERCE  
D.M. MEHTA COLLEGE OF SCIENCE  
A.R. MEHTA COLLEGE OF ARTS  
Dr. R.T. DOSHI COLLEGE OF COMPUTER SCIENCE  
Plot No.9, SEC.-19, AIROLI,  
NAVI MUMBAI-400 708.

Date: 28/11/2023




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### NOTICE

All departmental members are hereby informed that the departmental meeting is arranged on November 30, 2023 at 1:30 p.m. in CS lab.

### **Agenda**

1. Conduction of Certificate Course of FYCS students
2. Exam Conduction of Certificate Course

  
Asst. Prof. Janhavi Kshirsagar  
Coordinator CS-IT DEPT



Date: 30/11/2023



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## Minutes of Meeting

November 30, 2023

The departmental meeting was held on November 30, 2023 at 1:30 p.m. in CS Lab.

Following matters were discussed and finalized as per agenda.

### ❖ Conduction of Bridge course of FYCS students

It was decided to conduct Certificate for FYCS students from 6<sup>th</sup> December 2023 to 12<sup>th</sup> December 2023. Total 5 modules shall be included in the Certificate Course. And it was decided that it should be 30 hours.

The duty of syllabus compilation was allotted to Mrs. Janhavi Kshirsagar and Ms. Shakuntala Kulkarni was allotted duty of timetable creation.

### ❖ Exam conduction of bridge course

It was decided to conduct examination on Google Form on 12<sup>th</sup> December 2023 after completion of lectures.

**Adjournment:** Meeting was adjourned at 2:30 pm.





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Date: 30/11/2023

**Following members were present:**


Dr. B.R. Deshpande- I/c. Principal  
Asst.Prof Janhavi Kshirsagar - CS/IT Coordinator  
Asst. Prof Sarita Sarang  
Dr. Sanjivani Nalkar  
Asst. Prof. Shakuntala Kulkarni  
Asst. Prof. Vinaya Mangale

**Signature**




Flyer :



**JNAN VIKAS MANDAL'S DEGREE COLLEGE**  
NAAC RE-ACCREDITED 'A+' GRADE (CGPA 3.31)  
Plot No. 9, Sector-19, Airoli, Navi Mumbai

*Department of Computer Science  
Organizes  
Certificate Course  
For  
FIRST Year Computer Science*

Date: 6<sup>th</sup> December 2023 to 12<sup>th</sup> December 2023  
Duration: 30 Hours

**Organizing Team:**  
Mrs. Sarita Sarang  
Dr. Sanjivani Nalkar  
Ms. Shakuntala Kulkarni

**Mrs. Janhavi Kshirsagar**  
CS-IT Coordinator

**Dr. B. R. Deshpande**  
I/c Principal and Chairperson





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 Diwali Maa College of Science  
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## Certificate Course for F.Y.B.Sc (C.S.)

**Duration: - 30 hours**

### OBJECTIVES: -

- 1) To introduce participants to the fundamental concepts of embedded systems.
- 2) To provide insights into the interaction between hardware and software in embedded systems.
- 3) To familiarize participants with the concepts of real-time operating systems.
- 4) To equip participants with skills that are relevant to the industry and current trends in embedded systems.

### OUTCOME: -

Students will be able to

- 1) Develop a solid understanding of the fundamental concepts and principles of embedded systems.
- 2) Gain proficiency in both hardware and software aspects of embedded systems.
- 3) Gain experience in completing embedded system projects from conception to implementation, demonstrating the ability to work on complex systems.


Module	Contents	Number of hours
I	Introduction	5 hours



	<p>What is an Embedded System, Embedded System Vs, General Computing System.</p> <p><b>Characteristic and quality attributes of Embedded System</b></p> <p>Characteristics of an Embedded System, Quality Attributes of Embedded System.</p>	
	Case study/Assignment and test	1 hour
II	<p><b>The Typical Embedded System</b></p> <p>Core of Embedded System (Different Types of Processors), Memory, Sensors and Actuators, Communication Interface, Embedded Firmware. IO Devices</p>	5 hours
	Case study/Assignment and test	1 hour
III	<p><b>Memories and Memory Subsystem</b></p> <p>Introduction, Classifying Memory, A general Memory Interface, ROM Overview, Static RAM Overview, Dynamic RAM Overview, Chip Organization, A SRAM Design, A DRAM Design, The DRAM Memory Interface</p>	5 hours
	Case study/Assignment and test	1 hour
IV	<p><b>Programming Concept and Embedded Programming in C/C++ and Java</b></p> <p>Software programming in Assembly Language (ALP) and in High-level Language 'C'. C program Elements: Header and Source Files and Pre-processor Directives, Program Elements: Macros and Functions, Program Elements: Types, Data Structures, Modifiers, Statements, Loops and Pointers,</p>	5 hours
	Case study/Assignment and test	1 hour
V	<p><b>Real Time Operating System(RTOS)</b></p> <p>Operating System Basics, Types of Operating Systems, Device Drivers, How to choose an RTOS, Features of RTOS, Advantages Disadvantages Applications in which RTOS used.</p>	5 hours



**Time Table :**

						
MohanlalRaichand Mehta College of Commerce DiwaliMaa Degree College of Science AmritlalRaichand Mehta Degree College of Arts Padmashree(Dr.) R.T. Doshi Degree College of Computer Science Plot no.9, Sector -19, Airoli Navi Mumbai Permanently Unaided, Affiliated to Mumbai University NAAC Re-accredited CGPA "A+" Grade (3rd cycle)						
<b>FYCS Certificate Course Time table 2023-24</b>						
Date	6/12/2023	7/12/2023	8/12/2023	9/12/2023	11/12/2023	12/12/2023
7:50-8:40	Module 5	Module 2	Module 4	Module 3	Module 1	Module 4
8:40-9:30	Module 3	Module 4	Module 5	Module 1	Module 4	Module 3
9:30-9:50	BREAK					
9:50-10:40	Module 2	Module 5	Module 3	Module 2	Module 5	Module 2
10:40-11:30	Module 4	Module 1	Module 1	Module 5	Module 2	Module 1
	Module 1	Module 3	Module 2	Module 4	Module 3	Module 5
Module 1: Mrs. Janhavi Kshirsagar			Module 4: Ms. Shakuntala Kulkarni			
Module 2: Mrs. Sarita Sarang			Module 5: Mrs. Vinaya M			
Module 3: Dr. Sanjivani Nalkar						

**Exam Paper :**



Section 1 of 3

## FYCS - Certificate Course 2023-24

Form description

This form is automatically collecting emails from all respondents. [Change settings](#)

**Name \***

Short answer text

**Email Address \***

Short answer text

**WhatsApp Number \***

Short answer text

**Roll Number \***



**Section 2 of 3**

Answer the Following Questions ✕ ⋮

Description (optional)

---

An embedded system is a combination of \_\_\_\_\_. \*

- Software
- Hardware
- Both a and b
- Devices

---

Which is the first microcontroller? \*

- 8051
- Arm
- TMS1000
- Intel 4004



ARM stands for \_\_\_\_\_ \*

- Advanced Rate Machines
- Artificial Running Machines
- Advanced RISC Machines
- Running Machines

The embedded system architecture can represent as a ..... architecture. \*

- Layered
- Continuous
- Single
- Un-layered

Which of the following designed system factors are minimized for an embedded application? \*

- Cost
- Size
- Performance
- Both a and b

Which memory storage is widely used in PCs and Embedded Systems? \*

- a) EEPROM
- b) Flash memory
- c) SRAM
- d) DRAM



How is the protection and security for an embedded system made? \*

- a) Security chips
- b) Memory disk security
- c) IPR
- d) OTP

Which type of memory is suitable for low volume production of embedded systems? \*

- a) Non-volatile
- b) RAM
- c) Volatile
- d) ROM

How an embedded system communicate with the outside world? \*

- a) Memory
- b) Output
- c) Peripherals
- d) Input 1

Which of the following unit protects the memory? \*

- a) memory management unit
- b) peripheral unit
- c) execution unit
- d) bus interface unit 1



Which one of the errors will be handled by an Operating System?

- a) lack of paper in printer
- b) connection failure in the network
- c) power failure
- d) all of the mentioned

What is the Real Time Operating System?

- a) Used for monitoring events as they occur
- b) Used for program development
- c) Used for Mainframe Computers
- d) Used for program development

Device driver required in?

- a) Register
- b) Main Memory
- c) Disk
- d) Cache

Operating System is a -----software

- a) System
- b) Application
- c) Real time
- d) Other



When the system processes data instructions without any delay is called as

- a) online system
- b) real-time system
- c) instruction system
- d) offline system

Choose a right C Statement. \*

- Loops or Repetition block executes a group of statements repeatedly.
- Loop is usually executed as long as a condition is met.
- Loops usually take advantage of Loop Counter
- All the above.

Loops In C Language are implemented using.? \*

- While Block
- For Block
- Do While Block
- All the above

What is the way to suddenly come out of or Quit any Loop in C Language.? \*

- continue; statement
- break; statement
- leave; statement
- quit; statement



Prior to using a pointer variable it should be \*

- Declared
- Initialized
- Both declared and initialized
- None of these

Is the NULL pointer same as an uninitialised pointer? \*

- True
- False

Which of the following is serial access memory? \*

- RAM
- Flash memory
- Shifters
- ROM



\_\_\_\_\_ converts physical characteristics into electrical signals \*

- Actuator
- Sensor
- Signal
- All of the Above

The communication channel which interconnects the various components within an embedded product is referred as \_\_\_\_\_ \*

- Device Level Communication
- Product Level Communication
- Embedded System
- None of the Above

\_\_\_\_\_ converts electrical signals into physical characteristics. \*

- Actuator
- Sensor
- Signal
- All of the Above

Which design allows the reuse of the software and the hardware components? \*

- Memory Design
- Input design
- Platform-based design
- Peripheral design







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### List of Participants

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**Feedback Form :**

Feedback Form



Description (optional)

Were the objectives of the course clear to you? \*

- Very Clear
- Moderately Clear
- Not at all Clear

The lectures were clear & easy to understand. \*

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly disagree



The course was organized in a manner that helped you understand the underlying concepts. \*

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly disagree

How useful to you was this course? \*

- Very Useful
- Moderately useful
- Not at all useful

How much did you learn from this course? \*

- A great deal
- A lot
- A moderate amount
- A little
- Nothing

Overall, how would you describe the quality of the instruction in this course? \*

- Excellent
- Very good
- Good
- Fair
- Poor



What skills or knowledge did you learn or improve? \*

Long answer text



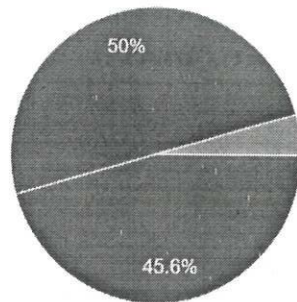


### Feedback Analysis :

#### Certificate Course Feedback Analysis FYCS Sem-II June 2023-24

Were the objectives of the course clear to you?

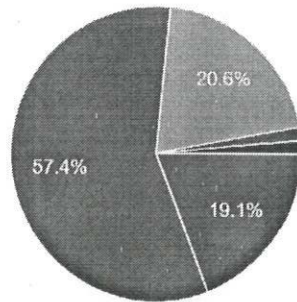
68 responses



- Very Clear
- Moderately Clear
- Not at all Clear

The lectures were clear & easy to understand.

68 responses

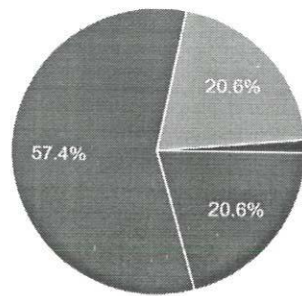


- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly disagree



The course was organized in a manner that helped you understand the underlying concepts.

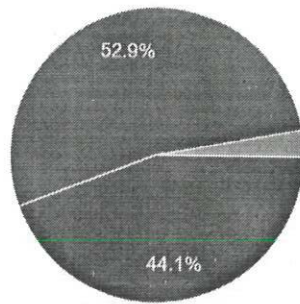
68 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly disagree

How useful to you was this course?

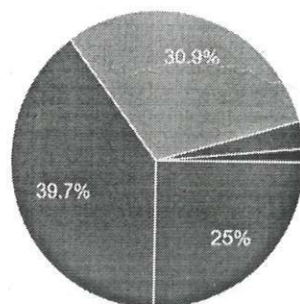
68 responses



- Very Useful
- Moderately useful
- Not at all useful

How much did you learn from this course?

68 responses

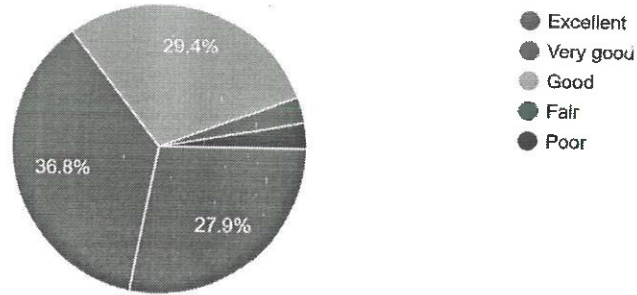


- A great deal
- A lot
- A moderate amount
- A little
- Nothing





Overall, how would you describe the quality of the instruction in this course?  
68 responses



**Certificate :**



**Jnan Vikas Mandal's Degree College**  
NAAC Re-Accredited 'A' Grade (CGPA- 3.33)  
Plot No. 9, Sector-19, Airoli, Navi Mumbai, Maharashtra - 400 708

**Certificate**  
*This certificate is awarded to*  
<<NAME>>  
*of F.Y.B.Sc (C.S) who has successfully completed Certificate Course organized by  
Department of Computer Science of JNM's Degree College from 6<sup>th</sup> December 2023  
to 12<sup>th</sup> December 2023.*

*Jankhirsagar*  
**Asst. Prof. Janhavi Kshirsagar**  
CS-IT Coordinator and Course Convener

*[Signature]*  
**Dr. B. R. Deshpande**  
I/C Principal





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## Report on Certificate Course

From December 6th to December 12th, 2023, a certificate course on "Embedded Systems" was organized for First Year Computer Science (FYCS) students. The comprehensive course spanned a total duration of 30 hours and encompassed five distinct modules, providing students with a thorough understanding of embedded systems.

The course benefitted 68 students.

In summary, a certificate course in embedded systems is essential for individuals seeking to stay competitive in the rapidly evolving technological landscape, providing them with practical skills, industry relevance, and a foundation for pursuing diverse career paths.

A test was conducted for all the students using Google Form on 12<sup>th</sup> December 2023 after lectures. Those students who cleared their certificate course examination were awarded with E-Certificates.

**Mrs. Janhavi Kshirsagar**  
Co-ordinator CS-IT DEPT



**Dr. B.R. Deshpande**

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