

**VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS),
MADURAI – 09.**

DEPARTMENT OF CIVIL ENGINEERING

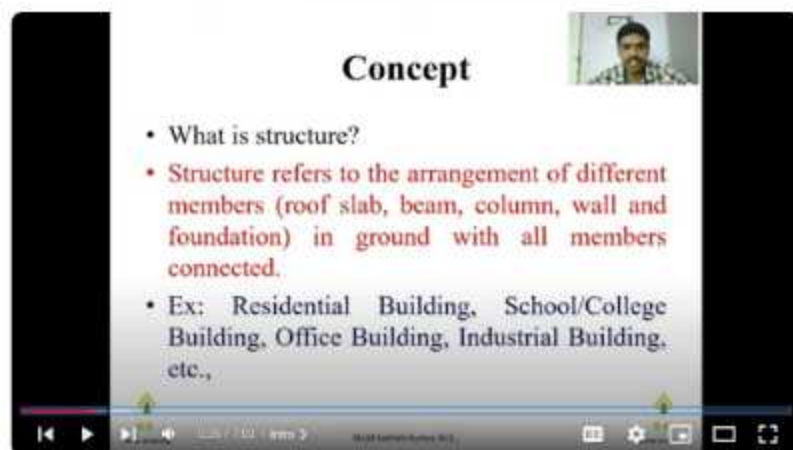
List of pedagogical techniques adopted for various subjects during the academic year 2023-24.

| SL.No | Subject Code/Name | Year/Sem | Pedagogical Techniques |
|-------|---|----------|---|
| 1 | 21CE301/Structural Analysis I | III/V | YouTube Videos – For better understanding the concept YouTube videos shared to the students. |
| 2 | 21CE302/Design of Reinforced Cement Concrete Elements | III/V | YouTube Videos – For better understanding the concept YouTube videos shared to the students. |
| 3 | 21CE209/Waste Water Engineering | II/IV | Field Visit – Visited water treatment plant to enrich their knowledge. |
| 4 | 21CE201/Engineering Geology | II/III | Animated Videos – Displayed animated videos in the classroom for better understanding the concept. |
| 5 | 21CE205/Surveying and Geomatics (TH + L) | II/III | Collaborative Learning – Industrial person trained the students about field surveying methods using total station. |
| 6 | 21CE308/Estimation, Costing and Valuation Engineering | III/VI | Collaborative Learning – Industrial person trained the students about how estimation of building is done in real time. |

21CE301/Structural Analysis I



rk center of learning



Basic Concepts in Structural Analysis | By Mr.M.Sathish Kumar, Asst. Professor, VCET, Madurai |

RK Center of Learning 381 subscribers 5 5 Share Download

86 views 2 years ago

Shared concept video to students before the day of discussing the same concept in the classroom

21CE302/Design of Reinforced Concrete Elements

YouTube

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Design of Reinforced Concrete Part 1

andal sureshkumar
47 subscribers

Subscribe

46

Share

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429 views 2 years ago

Shared concept video to students before the day of discussing the same concept in the classroom

21CE209/Waste Water Engineering



Visited treatment plant to improve their practical knowledge about water treatment process

21CE201/Engineering Geology



Displayed animated videos in the classroom for better understanding the concept

21CE205/Surveying and Geomatics (TH + L)



Industrial person trained the students about field surveying methods using total station

21CE308/Estimation, Costing and Valuation Engineering



Industrial person trained the students about how estimation of building is done in real time

Teachers use ICT-enabled tools including online resources for effective teaching and learning:

In our department, third Saturday of every month is considered as a pedagogy day. On that day, New pedagogy- innovative Teaching & learning methodology such as Role-play, Flipped Classroom, Project, Activity based learning, Interactive & Peer Discussion and self-learning cum seminar are used for making the students more interactive and understandable concepts.

Students enjoys this learning because of their involvement instead of regular teaching. Here, the Faculty will teach the concept theoretically, then ask the students-team for Role-play, by which slow-learners also can understand the concept easily.

With these methodologies, students enthusiastically participated and faculties are getting more response when they raised random questions. Faculties are expecting more pupils to participate in the events but few pupils will hesitate to come forward. So these events give opportunities in circular basis.

Overall, these kind of teaching methodologies improves the student involvement towards the concept/Topic/Subjects. Some of the activities are given below.

Role Play:

Role play is a form of experiential learning. Students take on assigned roles and act out those roles through a scripted play. The role play can be carried out one-to-one (individual role play) or as a group role play with each member in the group taking on a role/character. Roles and rules for a role play are clearly defined in the script. Role plays can provide very powerful learning experiences for students by immersing them in simulated real world situations in which students act out a particular role/character in a safe environment.

Collaborative Learning:

Collaborative learning is a situation in which two or more people learn or attempt to learn something together. Unlike individual learning, people engaged in collaborative learning capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work, etc.). More specifically, collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experiences and take on asymmetric roles.

Flipped Classroom:

A flipped classroom is an instructional strategy and a type of blended learning. It aims to increase student engagement and learning by having pupils complete readings at home, and work on live problem-solving during class time. This pedagogical style moves activities, including those that may have traditionally been considered homework, into the classroom. With a flipped classroom, students watch online lectures, collaborate in online discussions, or carry out research at home, while actively engaging concepts in the classroom with a mentor's guidance.

Project Based Learning:

Project-based learning (PBL) is a teaching method that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems. Students learn about a subject by working for an extended period of time to investigate and respond to a complex question, challenge, or problem. It is a style of active learning and inquiry-based learning. PBL contrasts with paper-based, rote memorization, or teacher-led instruction that

presents established facts or portrays a smooth path to knowledge by instead posing questions, problems, or scenarios

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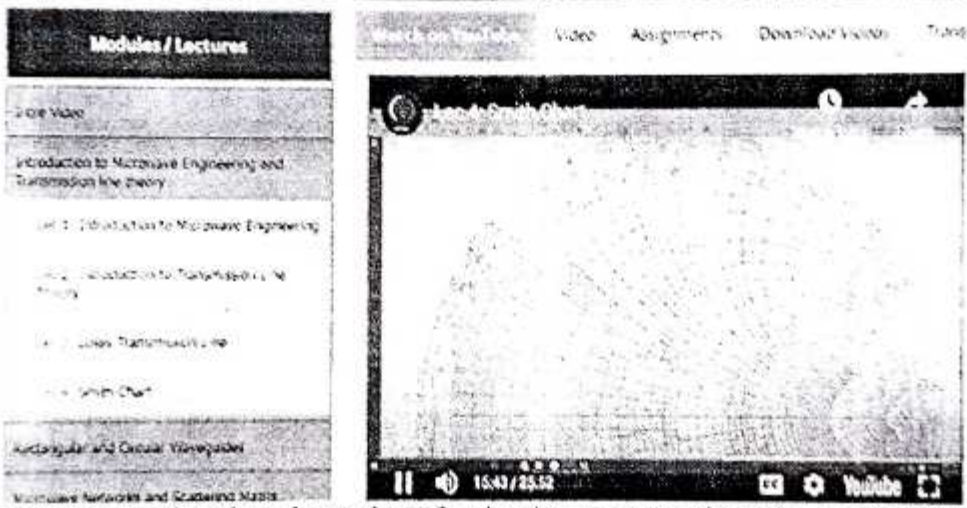
<https://sites.google.com/vcet.ac.in/pedagogy-cse/home/pedagogy-23-24>

Velammal College of Engineering & Technology(Autonomous), Madurai
Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC302-Transmission Lines and RF Systems |
| Batch | 2022- 2026 |
| Year/Semester/Section | III/V/A |
| Course Component | CORE |
| Name of the Instructor | Dr.S.Murugan |

Pedagogical Technique 1

| Pedagogical Technique | Name of the topic(s) |
|--|---|
| NPTEL Videos | Single stub matching and double stub matching |
|  <p>The screenshot shows an NPTEL video player interface. On the left, there is a 'Modules / Lectures' sidebar with a list of topics including 'Introduction to Microwave Engineering and Transmission line theory', 'Introduction to Microwave Engineering', 'Introduction to Transmission Line Theory', 'Losses in Transmission Lines', 'Smith Chart', 'Rectangular and Circular Waveguides', and 'Microwave Networks and Scattering Matrices'. The main video player area shows a video frame with a circuit diagram of a transmission line. The video player controls at the bottom indicate a duration of 15:43 / 25:52.</p> | |
| <p>NPTEL Videos shared to the students for the above mentioned topics. It has played in the classroom on 29/08/2024.</p> | |

S. Murugan
 Course In-charge 29/8/24

S. Murugan
 Course Coordinator 29/8/24



R. Jeyapriya
 Module Coordinator 29/8/24

K. Aravind
 HoD/ECE 29/08/24

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC302-Transmission Lines and RF Systems |
| Batch | 2022- 2026 |
| Year/Semester/Section | III/V/ A |
| Course Component | CORE |
| Name of the Instructor | Dr.S.Murugan |

Pedagogical Technique 2

| Pedagogical Technique | Name of the topic(s) |
|---|--|
| Problem Solving TPS, PS (GATE) | <ol style="list-style-type: none"> Finding different line parameters Characteristics of Parallel plate waveguide. |
|  <p>GATE 2022 Electricity and Communications Engineering (EC)</p> <p>Q.22. A rectangular parallel-plate waveguide filled with a dielectric of $\epsilon_r = 10$ has a cross-section of $10 \text{ cm} \times 10 \text{ cm}$. The frequency spectrum of the waveguide is as follows:</p> <p>(A) $4 \times 10^{10} \text{ Hz}$</p> <p>(B) $0.5 \times 10^{10} \text{ Hz}$</p> <p>(C) $8 \times 10^{10} \text{ Hz}$</p> <p>(D) $1 \times 10^{10} \text{ Hz}$</p> |  <p>GATE 2021 Graduate Aptitude Test in Engineering (GATE)</p> <p>Q.15. Consider a rectangular waveguide, $z = 0$ with two conductors at $x = 0$ and $x = a$. A plane wave is propagating in the region $z > 0$ with electric field vector $\mathbf{E} = 10 \cos(\omega t + \beta z) \hat{y}$ A/m. The wave is incident on the plane at $x = 0$. The region $z > 0$ is filled with a lossless medium, permeability $\mu = \mu_0$ and permittivity $\epsilon = \epsilon_0$, where $\epsilon_0 = 8.85 \times 10^{-12} \text{ F/m}$ and $\mu_0 = 4\pi \times 10^{-7} \text{ H/m}$. The value of the reflection coefficient is:</p> <p>(A) 1</p> <p>(B) 0</p> <p>(C) -1</p> <p>(D) 0.5</p> |
| <p>Gate Problems has been solved for the above mentioned topics on 2/9/2024 through TPS technique</p> | |

S. Murugan
2/9/24
Course In-charge

S. Murugan
2/9/24
Course Coordinator

P. J. Jeyapriya
Module Coordinator

S. Murugan
2/9/24
HoD/ECE

List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC302-Transmission Lines and RF Systems |
| Batch | 2022- 2026 |
| Year/Semester/Section | III/V/ A |
| Course Component | CORE |
| Name of the Instructor | Dr.S.Murugan |

Pedagogical Technique 3

| Pedagogical Technique | Name of the topic(s) |
|--|--|
| <p>Problem Solving Text Problems PST_x</p> <p><i>(Handwritten notes on the left side of the page, partially obscured by the table border, describe a problem involving a rectangular waveguide with dimensions 8.9" x 4.4" cross-section and 12" length, operating at 9.2 GHz with dominant mode. It asks for cutoff frequency, guide wavelength, phase velocity, characteristic impedance, and conductor loss in dB. It also mentions that different modes having the same cutoff frequency are called degenerate modes, and that E₁₀ and H₁₀ modes are always degenerate if one of the mode indices is zero.)</i></p> | <p style="text-align: center;">1. Rectangular waveguides</p> <p>Guide wavelength $\lambda_g = \frac{\lambda}{\sqrt{1 - \left(\frac{f_c}{f}\right)^2}}$</p> $\lambda_g = \frac{0.0978}{\sqrt{1 - \left(\frac{6.56}{9.2}\right)^2}}$ $= 4.29 \times 10^{-2} \text{ m}$ <p>Phase velocity $v_p = \frac{c}{\sqrt{1 - \left(\frac{f_c}{f}\right)^2}}$</p> $= \frac{3 \times 10^8}{\sqrt{1 - \left(\frac{6.56}{9.2}\right)^2}}$ $= 4.278 \times 10^8 \text{ m/sec}$ <p>Text Problems has been solved for the above mentioned topics on Rectangular waveguides on 3/10/2024.</p> |

S. Murugan
 3/10/24
Course In-charge

S. Murugan
 3/10/24
Course Coordinator

P. J. J.
 3/10/24
Module Coordinator

W. S.
 03/10/24
HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai

Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC401–Microwave and Optical Engineering |
| Batch | 2021-2025 |
| Year/Semester/Section | IV/VII/ B |
| Course Component | Professional core |
| Name of the Instructor | Dr.P. Rajeswari |

| S.No | Pedagogical Technique | Name of the topic(s) |
|------|-----------------------|---|
| 1. | Models | Directional couplers, Magic Tee , H plane Tee and E plane Tee |
| 2. | PS(Tx) | Reflex Klystron, Travelling wave and single mode & multi mode fiber |
| 3. | NPTEL Videos | Gunn diode, varactor and IMPATT diode |


Course In charge


Course Coordinator


Module Coordinator






HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering

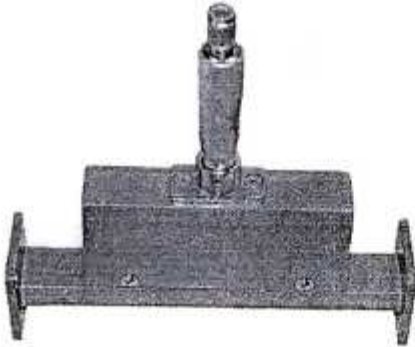
List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC401 -Microwave and Optical Engineering |
| Batch | 2021-2025 |
| Year/Semester/Section | IV/VII/A |
| Course Component | CORE |
| Name of the Instructor | Dr.P.Rajeswari |

Pedagogical Technique 1

| Pedagogical Technique | Name of the topic(s) |
|---|--|
| Models | Directional couplers, Magic Tee , H plane Tee and E plane Tee |
|  |  |
| <p>MAGIC TEE</p>  |  |

VARIABLE ATTENUATOR



WAVEGUIDE TERMINATION



Models shown to the students at the time handling for the above mentioned topics in the classroom on 24.07.2024, 25.07.2024 and 31.07.2024 .


31/7/24
Course incharge/course coordinator


31/7/24
Module coordinator


31/07/24
HOD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai

Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC401 –Microwave and Optical Engineering |
| Batch | 2021-2025 |
| Year/Semester/Section | IV/VII/A |
| Course Component | CORE |
| Name of the Instructor | Dr.P.Rajeswari |

Pedagogical Technique 2

Pedagogical Technique 3

| Pedagogical Technique | Name of the topic(s) |
|--|---|
| Problem Solving Text Problems PST _x | Reflex, Klystron, Travelling wave and single mode & multi mode fiber |
| <p>Example 9-4-1: Reflex Klystron</p> <p>A reflex klystron operates under the following conditions:</p> <p>$V_0 = 600 \text{ V}$ $L = 1 \text{ mm}$</p> <p>$R_{\text{in}} = 15k\Omega$ $\frac{f}{m} = 1.759 \times 10^8 \text{ (MKS system)}$</p> <p>$f_0 = 9 \text{ GHz}$</p> <p>The tube is oscillating at f_0 at the peak of the $n = 2$ mode or $1\frac{1}{2}$ mode. Assume that the transit time through the gap and beam loading can be neglected.</p> <ol style="list-style-type: none"> Find the value of the repeller voltage V_r. Find the direct current necessary to give a microwave gap voltage of 200 V What is the electronic efficiency under this condition? <p>Solution</p> | <p>Example 9-5-1: Operation of Traveling-Wave Tube (TWT)</p> <p>A traveling-wave tube (TWT) operates under the following parameters:</p> <p>Beam voltage: $V_0 = 3 \text{ kV}$</p> <p>Beam current: $I_0 = 30 \text{ mA}$</p> <p>Characteristic impedance of helix: $Z_0 = 10 \Omega$</p> <p>Circuit length: $N = 50$</p> <p>Frequency: $f = 10 \text{ GHz}$</p> |

a. From Eq. (9-5-56) the gain parameter is

$$C = \left(\frac{I_0 Z_0}{4V_0} \right)^{1/3} = \left(\frac{30 \times 10^{-3} \times 10}{4 \times 3 \times 10^3} \right)^{1/3} = 2.92 \times 10^{-2}$$

b. From Eq. (9-5-80) the output power gain is

$$A_p = -9.54 + 4.73 NC = -9.54 + 47.3 \times 50 \times 2.92 \times 10^{-2} = 59.52 \text{ dB}$$

c. The four propagation constants are

$$\beta = \frac{\omega}{v_0} = \left(\frac{2\pi \times 10^{10}}{0.593 \times 10^8 \sqrt{3} \times 10^3} \right) = 1.93 \times 10^3 \text{ rad/m}$$

$$\gamma_1 = -\beta C \frac{\sqrt{3}}{2} + j\beta \left(1 + \frac{C}{2} \right)$$

$$= -1.93 \times 10^3 \times 2.92 \times 10^{-2} \times 0.87 + j1.93 \times 10^3 \left(1 + \frac{2.92 \times 10^{-2}}{2} \right)$$

$$= -49.03 + j1952$$

$$\gamma_2 = \beta C \frac{\sqrt{3}}{2} + j\beta \left(1 + \frac{C}{2} \right) = 49.03 + j1952$$

$$\gamma_3 = j\beta(1 - C) = j1.93 \times 10^3 (1 - 2.92 \times 10^{-2})$$

$$= j1872.25$$

$$\gamma_4 = -j\beta \left(1 - \frac{C}{4} \right) = -j1.93 \times 10^3 \left[1 - \frac{(2.92 \times 10^{-2})^2}{4} \right]$$

$$= -j1930$$

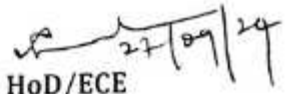
Text Problems has been solved for the above mentioned topics on Reflex, Klystron, Travelling wave and single mode & multi mode fiber on 09.09.2024 & 27.09.2024. The same topic has been given as assignment to students.

 27/09/24

Course In-charge Course Coordinator

 27/09/24

Module Coordinator

 27/09/24

HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC401 -Microwave and Optical Engineering |
| Batch | 2021-2025 |
| Year/Semester/Section | IV/VII/A |
| Course Component | CORE |
| Name of the Instructor | Dr.P.Rajeswari |

Pedagogical Technique 3

| Pedagogical Technique | Name of the topic(s) |
|-----------------------|---------------------------------------|
| NPTEL Videos | Gunn diode, varactor and IMPATT diode |

The screenshot shows a video player interface for NPTEL. The title is "Lec 4: Gunn Diodes, IMPATT Diodes and Varactor Diodes". The main content is a slide titled "Negative differential resistance: RWH theory".

The slide contains two diagrams:

- Energy Band Diagram:** Shows the conduction band with two valleys: Lower Valley (L) and Upper Valley (U). The energy difference between them is $\Delta E = 0.36 \text{ eV}$. The energy of the Lower Valley is $E_g = 1.43 \text{ eV}$. The valence band is shown below with $k=0$.
- Electron Velocity vs. Applied Electric Field Graph:** Shows a curve where electron velocity v_d increases linearly in the lower valley ($v_d = \mu_L E$), reaches a peak at field E_c , and then decreases in the upper valley ($v_d = \mu_U E$), illustrating negative differential resistance.

Below the diagrams is a table with columns: Valley, Effective mass, and Mobility μ cm²/Vs.

NPTEL Videos shared to the students for the above mentioned topics. It has played in the classroom on 24.08.24

[Signature]
 Course In-charge/Course Coordinator

[Signature]
 Module Coordinator

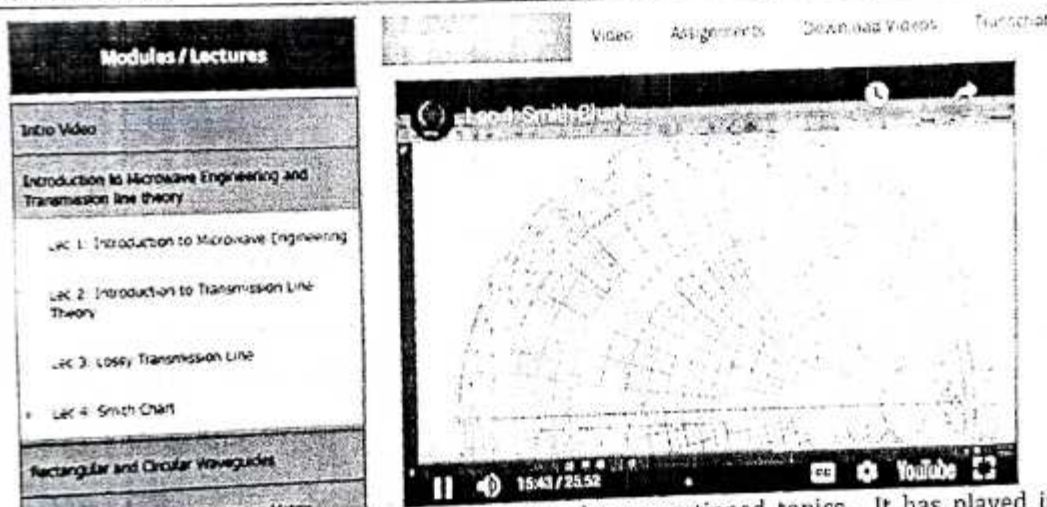
[Signature]
 HoD/ECE 25/08/24

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC302-Transmission Lines and RF Systems |
| Batch | 2022- 2026 |
| Year/Semester/Section | III/V/B |
| Course Component | CORE |
| Name of the Instructor | Dr.S.Regina |

Pedagogical Technique 1

| Pedagogical Technique | Name of the topic(s) |
|---|---|
| NPTEL Videos | Single stub matching and double stub matching |
|  <p>The screenshot shows a video player interface. On the left, there is a 'Modules / Lectures' sidebar with the following items: 'Intro Video', 'Introduction to Microwave Engineering and Transmission line theory', 'Lec 1: Introduction to Microwave Engineering', 'Lec 2: Introduction to Transmission Line Theory', 'Lec 3: Lossy Transmission Line', 'Lec 4: Smith Chart', 'Rectangular and Circular Waveguides', and 'Microwave Networks and Scattering Matrices'. The main video area displays a Smith Chart with a transmission line calculation. The video title is 'Lec 4: Smith Chart'. The video player controls at the bottom show a progress bar at 15:43 / 25:52 and the YouTube logo.</p> | |
| <p>NPTEL Videos shared to the students for the above mentioned topics. It has played in the classroom on 16/08/2024, 30/08/2024, 05/09/2024 & 06/09/2024</p> | |

S. Regina
 16/08/24
 Course In-charge

S. Hanuman
 16/08/24
 Course Coordinator


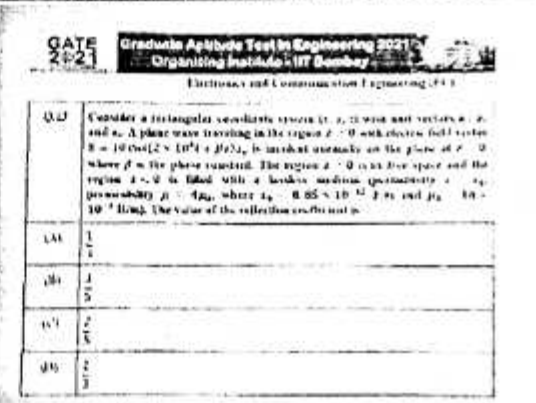
R. Regina
 16/08/24
 Module Coordinator

S. Hanuman
 01/08/24
 HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
List of innovative pedagogical techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC302-Transmission Lines and RF Systems |
| Batch | 2022- 2026 |
| Year/Semester/Section | III/V/ B |
| Course Component | CORE |
| Name of the Instructor | Dr.S.Regina |

Pedagogical Technique 2

| Pedagogical Technique | Name of the topic(s) |
|--|---|
| Problem Solving TPS, PS (GATE) | <ol style="list-style-type: none"> Finding different line parameters using smith chart Line of zero dissipation-Voltage and Current on the dissipationless line |
|  <p>GATE 2022 Graduate Aptitude Test in Engineering 2022 Electronics and Communication Engineering (EE) Q.52. A waveguide consists of two infinite parallel plates separated by a distance of 10 cm, with air in the dielectric. Assume the speed of light to be 3×10^8 m/s. The frequency in GHz of TM waves which can propagate in this waveguide is (A) 6×10^{10} Hz (B) 2.5×10^{10} Hz (C) 6×10^{10} Hz (D) 1×10^{10} Hz</p> |  <p>GATE 2021 Graduate Aptitude Test in Engineering 2021 Organising Institute - IIT Bombay Electronics and Communication Engineering (EE) Q.17. Consider a rectangular waveguide system in $z = 0$ wave and vectors \mathbf{a}, \mathbf{b}, and \mathbf{c}. A plane wave traveling in the region $z > 0$ with electric field vector $\mathbf{E} = 10 \cos(2\pi \times 10^8 t + \beta y)$, is incident normally on the plane at $z = 0$ where β is the phase constant. The region $z < 0$ is an free space and the region $z > 0$ is filled with a lossless medium characterized by permeability $\mu = 4\mu_0$, where $\mu_0 = 4\pi \times 10^{-7}$ H/m and $\mu_r = 10^{-4}$ H/m. The value of the reflection coefficient is (A) $\frac{1}{4}$ (B) $\frac{1}{5}$ (C) $\frac{2}{5}$ (D) $\frac{2}{3}$</p> |
| <p>Gate Problems has solved for the above mentioned topics on 05/08/2024, 06/08/2024, 28/08/2024, 29/08/2024 & 30/08/2024 through TPS technique</p> | |

S. Regina
 Course In-charge
 21/8/24

S. Manoj
 Course Coordinator
 21/8/24

R. J. J.
 Module Coordinator
 21/8/24

S. Manoj
 HoD/ECE
 02/08/24

Velammal College of Engineering & Technology (Autonomous), Madurai

Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

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|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC302-Transmission Lines and RF Systems |
| Batch | 2022- 2026 |
| Year/Semester/Section | III/V/ B |
| Course Component | CORE |
| Name of the Instructor | Dr.S.Regina |

Pedagogical Technique 3

| Pedagogical Technique | Name of the topic(s) |
|---|--|
| Problem Solving Text Problems PSTx | 1. Infinite length transmission line-wavelength, velocity of propagation |
| <p>(ii) A rectangular air filled waveguide with dimension $0.9'' \times 0.4''$ cross-section and $12''$ length is operated at 9.2 GHz with dominant mode. Find cutoff frequency, guide wavelength, phase velocity, characteristic impedance and conductor loss in dB.</p> <p>(i) Different modes having the same resonant frequency are called degenerate modes. Thus $TM_{m,0}$ and $TE_{m,0}$ modes are always degenerate if one of the mode indices is zero.</p> <p>(ii) $a = 0.9'' = 2.54 \times 10^{-2} \times 0.9 = 2.286 \times 10^{-2} \text{ m}$ $b = 0.4'' = 2.54 \times 10^{-2} \times 0.4 = 1.016 \times 10^{-2} \text{ m}$ $f = 9.2 \text{ GHz} = 9.2 \times 10^9 \text{ Hz}$ TE_{10} mode (dominant mode)</p> $v_p^2 = c^2 \left[\frac{m^2}{a^2} - \left(\frac{f}{c} \right)^2 \right]$ | <p>Guide wavelength $\lambda_g = \frac{\lambda}{\sqrt{1 - \left(\frac{f_c}{f}\right)^2}}$</p> $\lambda_g = \frac{0.0978}{\sqrt{1 - \left(\frac{6.56}{9.2}\right)^2}}$ $= 4.29 \times 10^{-2} \text{ m}$ <p>Phase velocity $v_p = \frac{c}{\sqrt{1 - \left(\frac{f_c}{f}\right)^2}}$</p> $= \frac{3 \times 10^8}{\sqrt{1 - \left(\frac{6.56}{9.2}\right)^2}}$ $= 4.278 \times 10^8 \text{ m/sec}$ |
| Text Problems has solved for the above mentioned topics on 25/07/2024, 26/07/2024, 28/09/2024 & 30/09/2024 | |

S. Regina
 22/7/24
 Course In-charge

S. Rajasekar
 22/7/24
 Course Coordinator

R. Jeyapriya
 22/7/24
 Module Coordinator

S. Regina
 22/07/24
 HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
List of Innovative Pedagogical Techniques

| | |
|------------------------|--|
| Degree | B.E. – ECE |
| Course Code – Title | EC8553 – Discrete-Time Signal Processing |
| Batch | 2020-2024 |
| Year/Semester/Section | III/ V/ B |
| Course component | Professional core |
| Name of the Instructor | Dr.P.Suveetha Dhanaselvam |

| S.No | Pedagogical Technique | Name of the topic(s) |
|------|-----------------------|---|
| 1. | Role Play | Decimation-in-frequency (DIF) Fast Fourier transform (FFT). |
| 2. | Group Tasks | Problems in DFT, DIT and DIT |

P. S. 4
3/8/2022
Course I/C/Coordinator

S. Dhanaselvam
2/8/22
Module Coordinator

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering

Pedagogical Techniques-Proof

| | |
|-------------------------------|---|
| Degree | B.E. – ECE |
| Course Code – Title | EC8553 – Discrete-Time Signal Processing |
| Batch | 2020-2024 |
| Year/Semester/Section | III/ V/ B |
| Course component | Professional core |
| Name of the Instructor | Dr.P.Suveetha Dhanaselvam |

Role Play



Group Tasks



P. S. W.
3/12/2022
Course I/C/Coordinator

J. J. J. J.
3/12/22
Module Coordinator

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
List of Innovative Pedagogical Techniques

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC305 - VLSI and Chip Design |
| Batch | 2021-2025 |
| Year/Semester/section | III/VI/A & B |
| Course Component | Professional core |
| Name of the Instructor | Dr. P. Suveetha Dhanaselvam & Mr.B.Karthikeyan |

| S.No | Pedagogical Technique | Name of the topic(s) |
|------|-----------------------|---|
| 1. | Group Tasks | Stick Diagram, Layout diagrams |
| 2. | Analogy | MOS Transistor |
| 3. | NPTEL Videos | Cascode Voltage Switch Logic, Dynamic Circuits, Pass Transistor Logic |

P. S. 4
12/4/2023
Course I/C/Coordinator

S. K. 12/4/2023
Module Coordinator

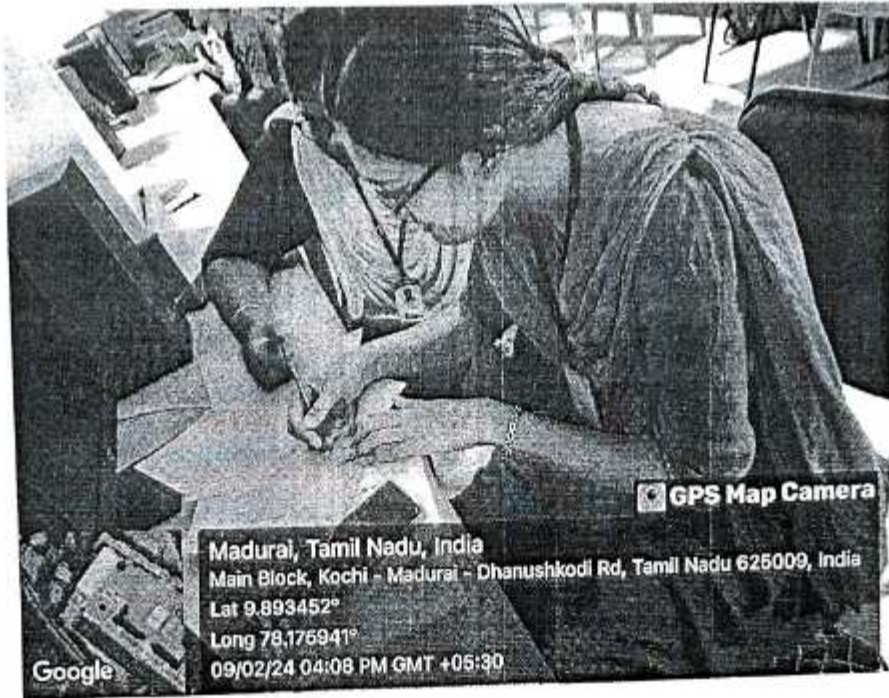
Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering

Pedagogical Techniques-Proof

| | |
|------------------------|---|
| Degree | B.E-ECE |
| Course Code-Title | 21EC305 - VLSI and Chip Design |
| Batch | 2021-2025 |
| Year/Semester/section | III/VI/A & B |
| Course Component | Professional core |
| Name of the Instructor | Dr. P. Suveetha Dhanaselvam & Mr.B.Karthikeyan |

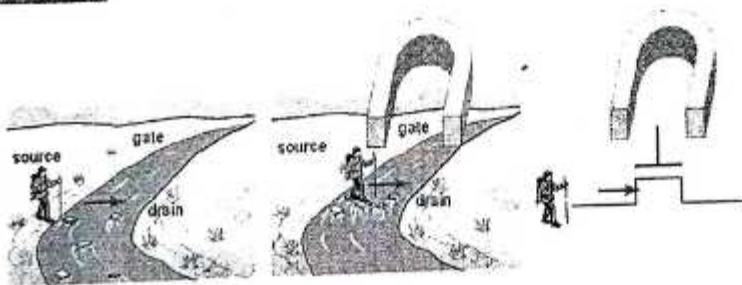
Group Assignment





Analogy- MOSFET gate & Electron flow

CMOS Transistor Analogy



P. S. V.
12/4/2023
Course I/C/Coordinator

P. K. V. L.
12/4/2023
Module Coordinator

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
List of Innovative Pedagogical Techniques

| | |
|-------------------------------|-------------------------------|
| Degree | B.E-ECE |
| Course Code-Title | 21EC203 / Signals and Systems |
| Batch | 2023-2027 |
| Year/Semester/section | II/III/B |
| Course Component | Professional Core |
| Name of the Instructor | Dr. P.Suveetha Dhanaselvam |

| S.No | Pedagogical Technique | Name of the topic(s) |
|------|-------------------------------------|---|
| 1. | Lecture with Software Demonstration | Step, Ramp, Pulse, Impulse, Sinusoidal, Exponential signals |
| | | Fourier Transform in CT Signal Analysis |
| 2. | Flash Cards | Fourier Transform – Definition and Properties |
| 3. | NPTEL Videos | Z Transform – Properties of Z Transform |

P. S. H
 28/6/2024
 Course I/C/Coordinator

VA
 05/07/2024
 Module Coordinator

VA
 05/07/2024
 HoD/ECE

VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY
[AUTONOMOUS], MADURAI
Department of Electronics and Communication Engineering

Pedagogical techniques-Proof

| | |
|------------------------|-------------------------------|
| Degree | B.E-ECE |
| Course Code-Title | 21EC203 / Signals and Systems |
| Batch | 2023-2027 |
| Year/Semester/section | II/III/B |
| Course Component | Professional Core |
| Name of the Instructor | Dr. P.Suveetha Dhanaselvam |

Lecture with Software Demonstration- Step, Ramp, Pulse, Impulse, Sinusoidal, Exponential signals, Fourier Transform in CT Signal Analysis



Flash Cards



P. S. Pr
15/11/2024
Course I/C/Coordinator

VA
15/11/24
Module Coordinator

VA
15/11/24
HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
List of Innovative Pedagogical Techniques

| | |
|-------------------------------|---|
| Degree | B.E. – ECE |
| Course Code – Title | 21EC303– Digital Signal Processing |
| Batch | 2022 – 2026 |
| Year/Semester/Section | III/ V/ A |
| Course component | Theory with Practical Course |
| Name of the Instructor | Dr.P.Suveetha Dhanaselvam |

| S.No | Pedagogical Technique | Name of the topic(s) |
|-------------|-------------------------------------|---|
| 1. | Lecture with Software Demonstration | Properties of DFT-periodicity, symmetry, circular convolution |
| 2. | NPTEL Videos | Frequency sampling method |
| 3. | Animation Videos | ADC-Quantization - Truncation and Rounding |

P. Suveetha
28/6/24
Course I/C/Coordinator

V. Anand
05/07/2024
Module Coordinator

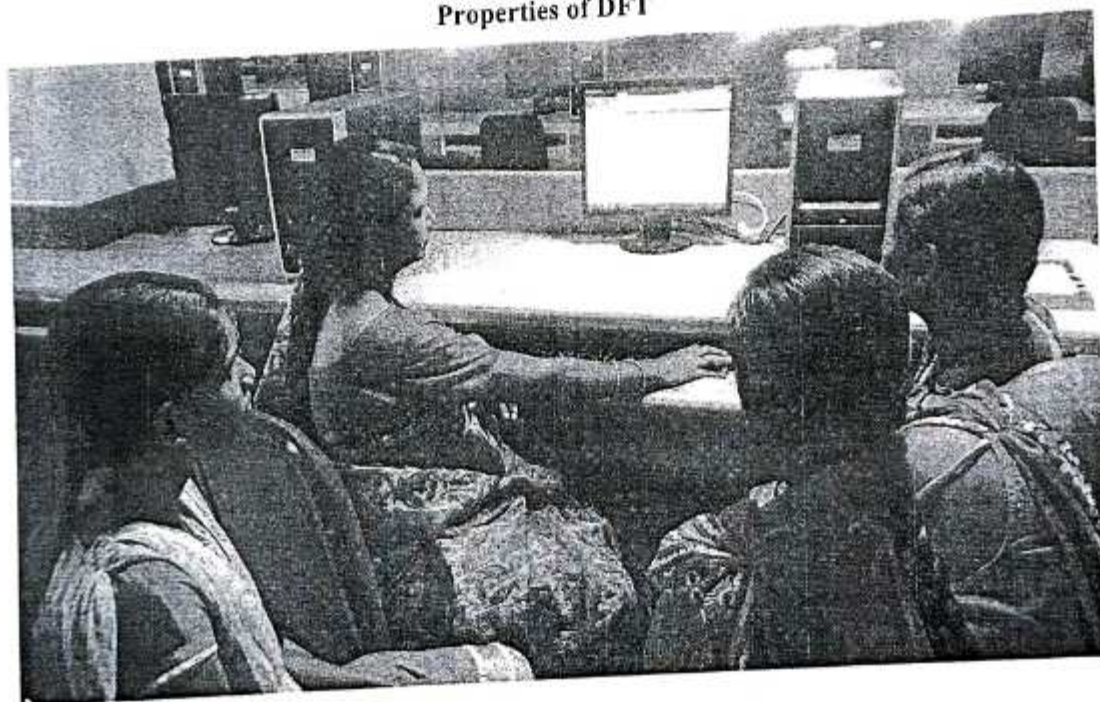
V. Anand
05/07/2024
HoD/ECE

Velammal College of Engineering & Technology (Autonomous), Madurai
Department of Electronics and Communication Engineering
Pedagogical Techniques-Proof

| | |
|------------------------|------------------------------------|
| Degree | B.E. – ECE |
| Course Code – Title | 21EC303– Digital Signal Processing |
| Batch | 2022 – 2026 |
| Year/Semester/Section | III/ V/ A |
| Course component | Theory with Practical Course |
| Name of the Instructor | Dr.P.Suveetha Dhanaselvam |

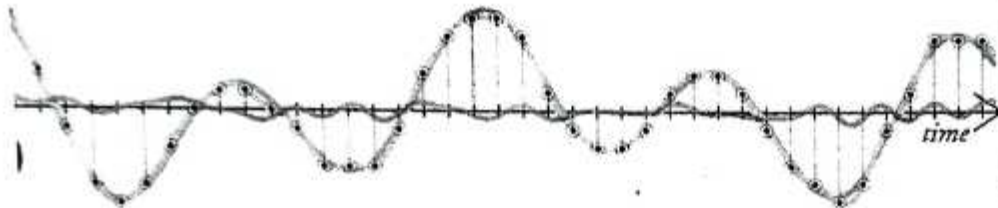
Lecture with Software Demonstration

Properties of DFT



Animation Videos- ADC-Quantization - Truncation and Rounding

quantization noise



P. S. ^{15/11/2024}
Course I/C/Coordinator

^{15/11/24}
Module Coordinator

^{15/11/24}
HoD/ECE

Velammal College of Engineering & Technology(Autonomous), Madurai
Department of Electronics and Communication Engineering

List of innovative pedagogical techniques

| | |
|------------------------|--|
| Degree | B.E-ECE |
| Course Code-Title | 21EC208 - Microprocessors and Microcontrollers |
| Batch | 2022-2026 |
| Year/Semester/section | II/IV/B |
| Course Component | Professional core |
| Name of the Instructor | Dr.S.Gandhimathi @ Usha |

| S.No | Pedagogical Technique | Name of the to |
|------|-----------------------|--|
| 1. | Group Assignment | 8086 Assembly Language Programs for various Arithmetic, Logic, Relational operations and String Manipulations. |
| 2. | Technical Quiz | Interfacing concepts. |
| 3. | Group Assignment | 8051 Assembly Language Programs for various Arithmetic, Logic and Relational operations. |

S. S. S.
18/11/24
Course In-charge

S. S. S.
18/11/24
Course Coordinator/Module Coordinator

K. K.
18/11/24
HOD/ECE

Ped

Group Assignment-I

21EC208 - Microprocessors and Microcontrollers

Class/Sem/Batch: II/IV-B/2022-2026

Topic: 8086 Assembly Language Programs for various Arithmetic, Logic, Relational operations and String Manipulations

Date of Announcement: 23-02-24

Date of Submission : 04-03-24

| | |
|------------------------|----|
| Program Logic (15) | 15 |
| Coding (20) | 20 |
| Presentation (3) | 3 |
| Group Involvement (10) | 9 |
| Reference (2) | 2 |
| Total | 49 |

Group members: G. B. Aaktee - 22ECEB01

S. Amrutha - 22ECEB02

A. Anisha - 22ECEB03

References: <https://www.scribd.com>

<https://github.com/Amey-Thakur/8086/>

8086 Assembly Language Programming by SCANLON, 1987

Assembly programming and the 8086 microprocessor

by JONES D.S



VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS),
MADURAI

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Technical Quiz - Questions

Subject Code/Name : 21EC208 / Microprocessors & Microcontrollers
Academic year/semester : 2023-24 / Even
Class & Sec : II ECE-B
Batch : 2022-26
Course In-charge : Dr.S.Gandhimathi @ Usha

1. Which of the following is correct about 8086 microprocessor?

- A. Intel's first x86 processor
- B. Motorola's first x86 processor
- C. STMICROELECTRONICS's first x86 processor
- D. NanoXplore x86 processor

2. Which of the following is the correct sequence of operations in a microprocessor?

- A. Opcode fetch, memory read, memory write, I/O read, I/O write
- B. Opcode fetch, memory write, memory read, I/O read, I/O write
- C. I/O read, opcode fetch, memory read, memory write, I/O write
- D. I/O read, opcode fetch, memory write, memory read, I/O write

3. For i/o of 8255, if -----, the word is taken as a bit set/reset word

- A. $d7=1$
- B. $d7=0$
- C. $d0=1$
- D. $d0=0$

4. 8255 has ----- i/o pins

- A. 28
- B. 26
- C. 24
- D. 22

5. 8255 has three ----parallel port

- A. 8bit
- B. 16bit
- C. 32bit
- D. 64bit

6. In ----, bidirectional data transfer is possible

- A. mode 0
- B. mode 1
- C. mode 2
- D. bsr

7. walkie-talkie is an example ofserial communication

- A. simplex
- B. half duplex
- C. full duplex
- D. none of these

8. Transmission through telephone lines is an example of....serial communication

- A. simplex
- B. half duplex
- C. full duplex
- D. none of these

9. Asynchronous serial communication involves

- A. start bit
- B. stop bits
- C. character data
- D. all of these

10. To configure 8255 with port A output, Port B input port C lower output and port C upper input

- A. `mov al,0afh`
- B. `mov al,0aeh`
- C. `mov al,0ceh`
- D. `mov a,0aah`

11. A high on ---line indicates that the buffer register is empty

- A. txrdy
- B. txe
- C. txc#
- D. both b and c

12. ADC 0808 uses ----technique

- A. successive approximation
- B. single step
- C. dual slope
- D. flash converter

13. The signals provided by ADC are

- A. soc
- B. eoc
- C. ale
- D. all of these

14. Flash ADC consist of....converters

- A. 2^n
- B. $2^n - 1$
- C. $2^n + 1$
- D. none of these

15. 8253/54 has ----independent timers/counters

- A. 1
- B. 2
- C. 3
- D. 4

16. 8253/54 timers can be programmed in---modes

- A. 1
- B. 3
- C. 6
- D. 5

17. In mode 0 of 8253/54 ----disables counting

- A. gate=1
- B. gate=0
- C. wr#=1
- D. wr#=0

18. 8253/54 has c----command that allows the user to check the count value programmed mode and current status of the counter

- A. write back
- B. write ahead
- C. read ahead
- D. read back

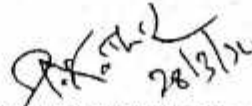
19. For mode 3 of 8253/54, if the count is odd the output will be high for---

- A. $2/(n+1)$
- B. $(n+1)/2$
- C. $2/(n-1)$
- D. $(n-1)/2$

20. 8255 has three ----parallel ports

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit


28/3/24
Course In-charge


28/3/24
Course Coordinator/Module Coordinator


28/03/24
HOD/ECE

VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY(AUTONOMOUS),
MADURAI
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Mini Project (Assignment-III) -Key

Topic : Build and Implement Control Applications using Arduino hardware.

Team Members:

1. Savita S (22ECEB22)
2. Anisha A (22ECEB03)
3. Vidhya Lakshmi S (22ECEB33)
4. Ganessga T (22ECEB10)

Year/Sec

:II-ECE-B

Title

: Development of an Alcohol detection system using MQ3 Gas Sensor

Course Code & Name

: 21EC208 Microprocessors and Microcontrollers

Date of Submission

: 13/05/2024

Rubrics:

| | |
|------------------------------|----|
| Abstract (10) | 10 |
| H/W & S/W description (30) | 30 |
| Block diagram & Working (30) | 25 |
| Model (10) | 10 |
| Applications (10) | 10 |
| Results (10) | 10 |
| Total(100) | 95 |

95
100

14/5/24

Signature
14/5/24
Signature of faculty

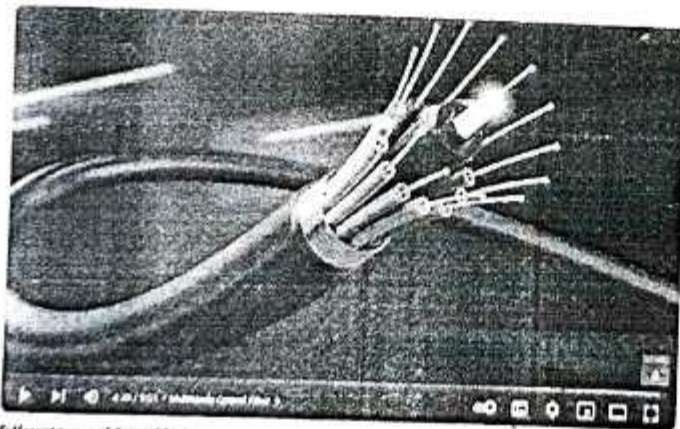
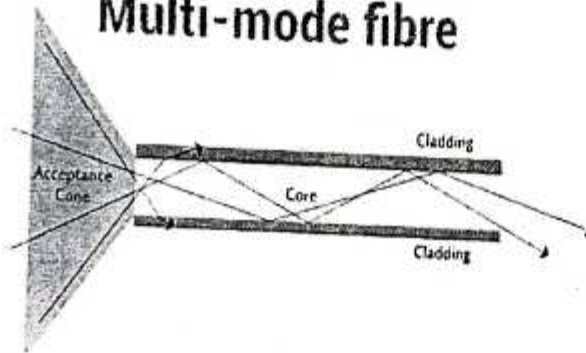
VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS),
MADURAI

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Animated Videos- Classification of Optical fibers

Subject Code/Name : EC8751 / Optical Communication
Academic year/semester : 2023-24 / Odd
Class & Sec : IV ECE- A & B
Batch : 2020-24
Course In-charge : Dr.S.Gandhimathi @ Usha
Date : 18.08.23

Multi-mode fibre



Different types of Optical Fiber

S. [Signature]
18/8/23
Course In-charge / Course Coordinator

k. kavithe
18/8/23
Module Coordinator

k. kavithe
18/8/23
HOD/ECE

Velammal College Of Engineering & Technology (Autonomous), Madurai
Department of ECE

Technical Quiz

Subject Name : EC8751 – Optical Communication and Networks
Academic Year : (2023-24) ODD Semester
Class : IV ECE A & B
Course Incharge: Dr.S.Gandhimathi @ Usha
Topic : LED ,LASER and Photodiode
Date : 22.09.2023

- 1) What is the light source has been used in transmitter?
 - 1.LASER
 - 2.LED
 - 3.Both
 - 4.None

- 2) Which one is correct?
 1. **The light output of an Led is approximately proportional to the current passing through it.**
 2. A typical LED has an operating voltage of about 0.7
 3. The light output of an LED is approximately proportional to the voltage across it.
 4. The light output of an Led is inversely proportional to current passing through it.

- 3) Which term from the following is not related to LASERS?
 1. **Carrier recombination**
 2. Stimulated emission
 3. Population Inversion
 4. None of the above

- 4) A photodiode is constructed of GaAs, which has a band gap energy of 1.43eV at 300K. The long wavelength cut-off (λ_c) for GaAs is
 1. **869 nm**
 2. 890nm
 3. 950 nm
 4. 1050nm

5) Typical efficiency for green LED is

1. 0.15w/w
2. 0.39w/w
3. 0.26w/w
4. 0.35w/w

6) From the following, what is a method of mixing colors to produce white light from an LED?

1. **Blue LED + green LED + red LED**
2. Pink :LED + infra red LED+ UV Led
3. Yellow LED + red LED + infrared LED
4. None of the above

7) Typical efficiency for red LED is

1. 0.25w/w
2. 0.15w/w
3. **0.39w/w**
4. 0.35w/w

8.The forward voltage across an LED is typically 0.7 V.

1. TRUE
2. FALSE

9.A photodiode is used in a reverse-bias position, and it will increase conduction as the light intensity increases.

1. TRUE
2. FALSE

10.OLEDs can be sprayed onto a substrate using an inkjet printer.

1. TRUE
 2. FALSE
11. When no light is emitted from an LED, the forward current is almost negligible and is called the dark current.
1. TRUE
 2. FALSE
12. An LED emits light when forward-biased.
1. TRUE
 2. FALSE
13. LASER stands for Light Amplification by Stimulated Emission by Radiation.
14. AC LED is a LED with a built in converter.
15. LED can operate at lower current densities than the injection layer.
16. LED structure fabricated using GaAs/AlGaAs material system for operation in the shorter wavelength region.
17. LED do not have thermal/ optical stabilization circuit.
18. LED can be fabricated less expensively with higher yield.
19. Semiconductor material that is used for the active layer for an optical source must have a direct bandgap light source materials.
20. A heavily doped p-n junction diode which emits light when it is forward biased is called "Light Emitting Diode (LED)"
21. What is the principle of Light Emitting Diode (LED)?
When a suitable voltage is applied to the leads, electrons are able to recombine with electron holes within the device, releasing energy in the form of photons.
22. Material(s) used for red LED
1. GaP
 2. GaAs
 3. AlGaAs
 4. All the above
23. LED is a type of

1. Zener diode
2. P-n junction diode
3. Varactor diode
4. Gunn diode

24. Which class of LASER diode is suitable for use in hand held laser pointer?

1. Class 1
2. Class 2
3. Class 3
4. Class 4

25. Advantage of photo transistor over photo diode

1. They are more sensitive to light
2. They are much smaller
3. They can be purchased in most stores

26. The fastest and most sensitive photodiode available is the

- Avalanche photodiode
- PIN diode
- photo-Darlington
- germanium photodiode
-

27. Principle of LASER?

A laser is a device that emits light through a process of optical amplification based on the stimulated emission of electromagnetic radiation.

28. Identify this diode.

(PIN diode)



S. J. K.
22/10/2022

Course In-charge / Course Coordinator

k. kavitha
22/10/22
Module Coordinator

k. kavitha
22/10/22
HOD/ECE

Velammal College of Engineering and Technology

(Autonomous)

Viraganoor, Madurai-625 009

pedagogical strategies

Generally defined as the theory and practice of teaching, pedagogy refers to the methodology and process of how instructors approach teaching and learning using a specific curriculum with specific goals in mind.

5 different Pedagogical approaches,

- Constructivist Approach,
- Collaborative Approach,
- Reflective Approach,
- Integrative Approach,
- The Inquiry-Based Approach.

Examples of pedagogical skills

- Communication.
- Adaptability. Every student has different needs and progresses at a different pace. ...
- Collaboration
- Inclusivity
- Compassion
- Review student evaluations. ...
- Discuss pedagogical skills with your colleague

Velammal College of Engineering and Technology

(Autonomous)

Viraganoor, Madurai-9

Pedagogical methodologies followed

Academic Year 2023 - 2024

II Year EEE

| S.No | Sub Code | Subject Name | Name of the Staff | Pedagogial Method used |
|------|----------|---------------------------------|-------------------|------------------------------|
| 2 | 21EE201 | Field Theory | Mrs.M.Devaki | Lecture with animated videos |
| 3 | 21EE202 | DC Machines and Transformers | Dr.T.Chandrasekar | Lecture with Demonstration |
| 4 | 21EE203 | Transmission and Distribution | Dr.N.Karpagam | Lecture with Demonstration |
| 5 | 21EE204 | Electronic Devices and Circuits | Dr.B.Kiruthiga | Lecture with animated videos |
| 6 | 21EE205 | Digital Logic Circuits | Dr.S.Senthilrani | Lecture with animated videos |

III Year EEE

| S.No | Sub Code | Subject Name | Name of the Staff | Pedagogial Method used |
|------|----------|-----------------------------------|-------------------|-------------------------------------|
| 1 | 21EE301 | Power System Analysis | Dr.S.Chellam | Lecture with software demonstration |
| 2 | 21EE302 | Power Electronics | Dr.A.Radhika | Lecture with demos |
| 3 | 21EE303 | Digital Signal Processing | Mrs.J.Rajeswari | Lecture with animated videos |
| 4 | 21PEE01 | Energy Utilization & Conservation | Dr.N.Karpagam | Lecture with animated videos |
| 5 | 21PEE12 | Special Electrical Machines | Dr.S.Dhanalakshmi | Lecture with animated videos |
| 6 | 21MCC01 | Constitution of India | Mr.A.Madhan | Lecture with videos |

IV Year EEE

| S.No | Sub Code | Subject Name | Name of the Staff | Pedagogial Method used |
|------|----------|------------------------------------|--------------------|------------------------------|
| 1 | EE8701 | High Voltage Engineering | Mrs.V.UmayalMuthu | Lecture with animated videos |
| 2 | EE8702 | Power System Operation and Control | Dr.S.Dhanalakshmi | Lecture with animated videos |
| 3 | EE8703 | Renewable Energy Systems | Mrs.R.Saranya | Lecture with animated videos |
| 4 | EI8703 | Biomedical instrumentation | Dr.R.Narmatha banu | Lecture with Animated videos |
| 5 | EE8010 | Power Systems Transients | Mrs.M.Devaki | Lecture with animated videos |
| 6 | OML751 | Testing of Materials | Dr.A.Radhika | Lecture with demos |

HoD / EEE

(Autonomous)

Department of Information Technology

2.2.1 B. Use of various instructional methods and pedagogical initiatives

Academic Year: 2023- 2024

Semester : Even

| Year / Sem | Subject Code/ Subject Name | Page No. |
|------------|---|----------|
| I / II | 21CS103/ Programming in C | 1 |
| II / III | 21IT201/ Computer Networks | 5 |
| II / III | 21CS206/ Database Management System | 11 |
| II / III | 21CS207/Design and Analysis of Algorithms | 17 |
| II / III | 21CS208/ Operating Systems | 21 |
| III / VI | 21IT305 / Mobile Computing | 25 |
| III / VI | 21IT306 / Fundamentals of Artificial Intelligence | 29 |
| III / VI | 21IT307 / Internet of Things | 31 |
| III / VI | 21PCS12 / Android App Development | 36 |


HoD/IT

(Autonomous)

Department of Information Technology

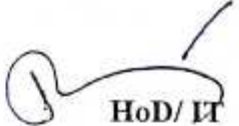
2.2.1 B. Use of various instructional methods and pedagogical initiatives

Academic Year: 2023- 2024

Semester : Even

| Year / Sem | Subject Code/ Subject Name | Page No. |
|------------|--|----------|
| I/II | 21CS103/ Programming in C | 1 |
| | a) Looping Statements – L+DE(S) | 1 |
| | b) Selection Sort – L+AV | 2 |
| | c) Dynamic Memory Allocation – CL(S) | 3 |
| | d) Binary Search Algorithm – L+DE(S) | 4 |
| II / III | 21IT201/ Computer Networks | 5 |
| | a) Transmission Media – FCR | 9 |
| | b) TCP/IP Protocol Suite | 10 |
| II / III | 21CS206/ Database Management System | 11 |
| | a) RAID – CLS | 15 |
| | b) Transactions, ACID Properties and Scheduling – CLS | 16 |
| II / III | 21CS207/Design and Analysis of Algorithms | 17 |
| II / III | 21CS208/ Operating Systems | 21 |
| | a) Hold and Wait (Condition for Deadlock) – Role Play | 24 |
| III / VI | 21IT305 / Mobile Computing | 25 |
| | a) Handover and Security - FCR | 26 |
| | b) Mobile Operating Systems-Special Constraints and Requirements - FCR | 27 |
| | c) UMTS – Role Play | 28 |

| | | |
|----------|---|----|
| III / VI | 21IT306 / Fundamentals of Artificial Intelligence | 29 |
| | a)Game Theory –Collaborative Learning (Seminar) b)Reasoning about Knowledge – Collaborative Learning (Seminar) | 30 |
| III / VI | 21IT307 / Internet of Things | 31 |
| | a)IoT Enabling Technologies – Role Play | 32 |
| | b)IoT Reference Architecture - Collaborative Learning (Seminar) | 33 |
| | c)Zigbee Architecture - Collaborative Learning (Seminar) | 34 |
| | d)IoT System Building Blocks – Arduino Board Details – L+DE(Software) | 35 |
| III / VI | 21PCS12 / Android App Development | 36 |
| | a)Expanding the user Experience: Action bars, Menu – L+DE(Software) | 37 |


HoD/ IT

Velammal College of Engineering and Technology, Madurai - 625 009

(Autonomous)

Department of Information Technology
Academic Year 2023-2024 (Even Semester)

Year/Sem/Sec: I/II/A

Batch: 2023-2027

Course Code/Name: 21CSI03/ Programming in C

V CET Regulation: 2021

Course In-charge: Mrs. A. Periya Nayaki, AP-III/IT

L+DE(S): LOOPING STATEMENTS

Description: In any programming language including C, loops are used to execute a set of statements repeatedly until a particular condition is satisfied. There are mainly two types of loops: Entry Controlled loops: In this type of loops the test condition is tested before entering the loop body. for Loop and while loop are entry-controlled loops. Exit Controlled Loops: In this type of loops, the test condition is tested or evaluated at the end of loop body. Therefore, the loop body will execute atleast once, irrespective of whether the test condition is true or false. do- while loop is exit controlled loop. This looping statements has been demonstrated using CodeBlocks software. Code:Blocks is a free C/C++ and Fortran IDE built to meet the most demanding needs of its users. It is designed to be very extensible and fully configurable. A very easy to use IdE with a free access makes it the best choice for c/c++ programmers and provide great features that makes the user experience very smooth. It is a superb IDE which is free, easy, and reliable. This software is a masterpiece and every beginner should start its programming journey from this software.



L+DE(S): Looping Statements (CodeBlocks) - A Section on 28.02.2024
Course in-charge: Mrs. A. Periya Nayaki, AP-III
Course Coordinator: Mrs. A. Periya Nayaki, AP-III
Module Coordinator: Mrs. M. Prabha, AP-II

HoD/IT/103
Dr. R. Kavitha

Velammal College of Engineering and Technology, Madurai - 625 009

(Autonomous)

Department of Information Technology
Academic Year 2023-2024 (Even Semester)

Year/Sem/Sec: I/II/A

Batch: 2023-2027

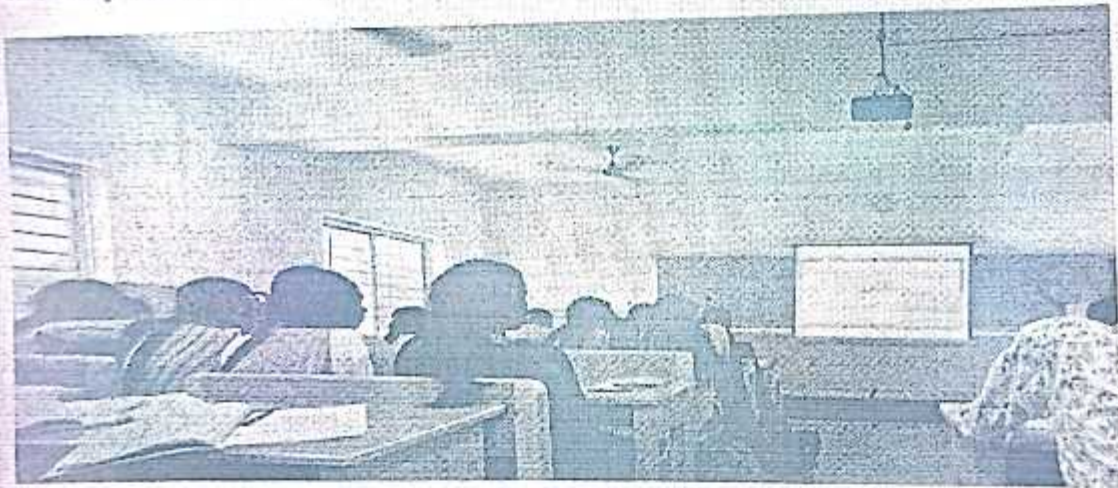
Course Code/Name: 21CS103/ Programming in C

VCET Regulation: 2021

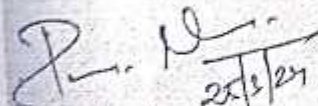
Course In-charge: Mrs. A. Periya Nayaki, AP-III/IT


L+AV: SELECTION SORT

Description: An animated video was played on the topic "Selection Sort". The video clearly explained the step wise execution of selection sort along with the algorithm. The students can easily understand the concept of selection sorting through video.



L+AV: Selection Sort – A Section


Course in-charge
Mrs. A. Periya Nayaki, AP-III


Module Coordinator
Mrs. M. Prabha, AP-II


HoD/IT
Dr. R. Kavitha

Velammal College of Engineering and Technology, Madurai - 625 009

(Autonomous)

Department of Information Technology
Academic Year 2023-2024 (Even Semester)

Year/Sem/Sec: I/II/A

Batch: 2023-2027

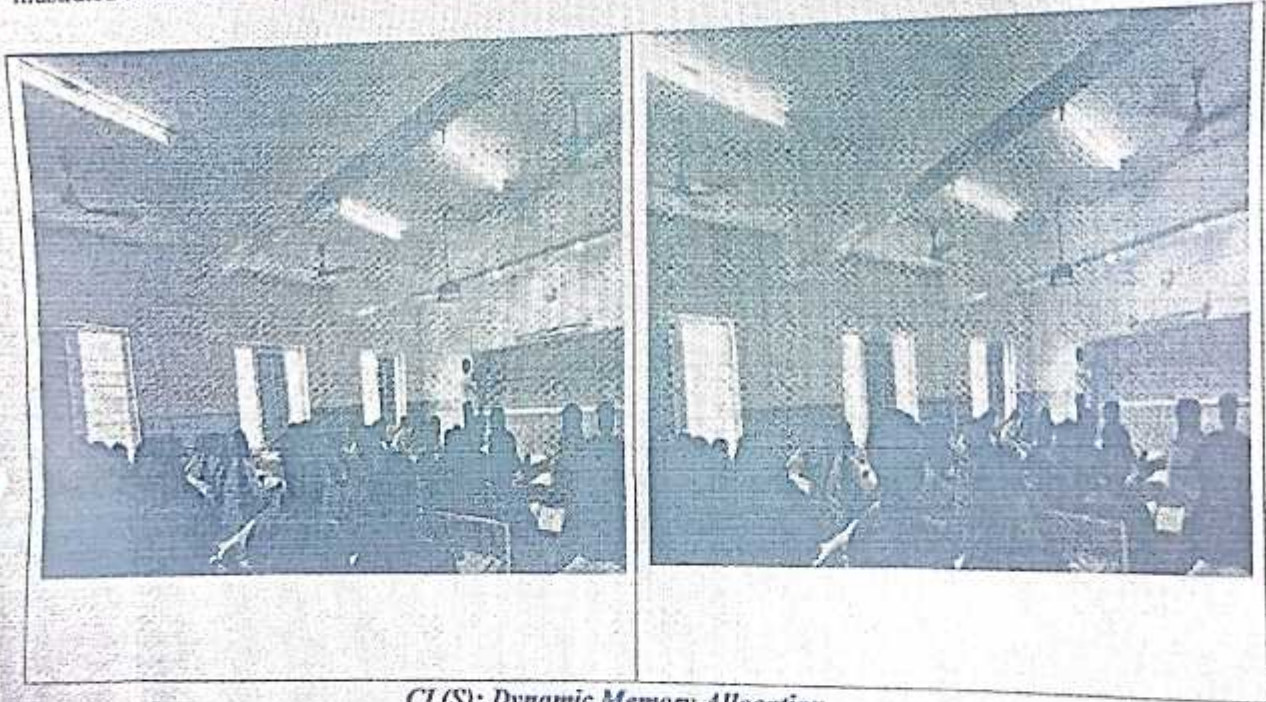
Course Code/Name: 21CS103/ Programming in C

VCET Regulation: 2021

Course In-charge: Mrs. A. Periya Nayaki, AP-III/IT

CL(S): DYNAMIC MEMORY ALLOCATION

Mr. Praveen Raaj from I/A has taken the seminar on Dynamic Memory Allocation in C Programming. He has clearly explained the functions of DMA (malloc(), calloc(), realloc(), free()) using blackboard. He illustrated each and every functions using sample code.



CL(S): Dynamic Memory Allocation

A. Periya Nayaki
Course in-charge
A. Periya Nayaki, AP-III

A. Periya Nayaki
Course Coordinator
Mrs. A. Periya Nayaki, AP-III

M. Prabha
Module Coordinator
Mrs. M. Prabha, AP-II

R. Kavitha
HoD/IT
Dr. R. Kavitha

Velammal College of Engineering and Technology, Madurai
(Autonomous)

Department of Information Technology
Academic Year 2023-2024 (EVEN Semester)

Batch: 2023-2027
Subject Code/Name: 21CS103 / Programming in C
Course In-charge: Mrs.K.Penyameen, AP-III

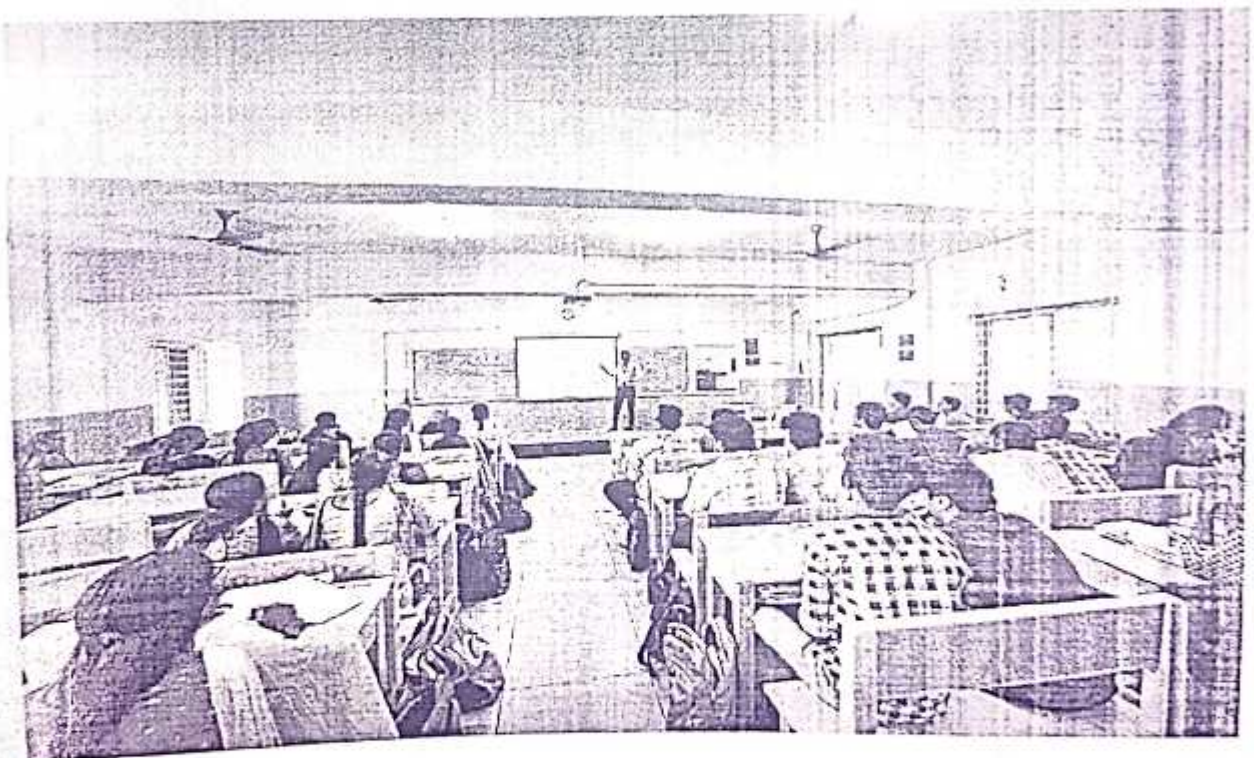
Year/Sem/Sec: I/II/B
Regulation: 2021
Date: 13.03.2024

L+DE (Software) on "Binary search Algorithm" (Unit II – CO2, K2)

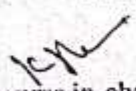
Description:

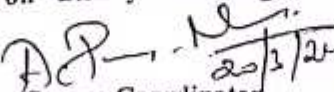
In this class, concepts of Binary search algorithm was explained and demonstrated. Division of search space and each traversal for every iteration was clearly illustrated. Teaching methodology Lecture with Demonstration (Software) was adopted for better understanding.

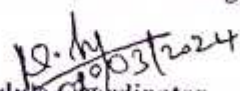
C Compilers like Turbo C, Watcom C/C++, Visual Studio were discussed about its features. Students were asked to try program with these software in their laboratory classes or home. Using Turbo C compiler Coding for Binary search Algorithm was demonstrated and executed at class session. At the end, students understood the concepts very well by asking the questions.

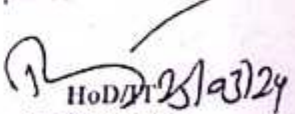


L+DE (Software) on "Binary search Algorithm" on 13.03.2024 during 6th period


Course in-charge
Mr. K. Penyameen


Course Coordinator
Mrs. A. Periyanyaki


Module Coordinator
Mrs. M. Prabha


HoD/IT
Dr. R. Kavitha

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Department of Information Technology

2.2.1 B. Use of various instructional methods and pedagogical initiatives

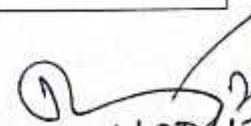
Academic Year: 2023- 2024

Semester : Odd

| Year / Sem | Subject Code/ Subject Name | Page No. |
|------------|--|----------|
| I / I | 21CS101/ Problem Solving and Python Programming | 1 |
| II / III | 21CS201 / Computer Organization and Architecture | 3 |
| II / III | 21CS202/Data Structures | 4 |
| II / III | 21CS203 / Object Oriented Programming | 20 |
| III / V | 21IT302 / Principles of Cloud Computing | 24 |
| III / V | 21PCS10 / Web Technology and Design | 35 |
| III / V | 21PCS01 / Data Science and Big Data Analytics | 38 |
| III / V | 21IT303 / Software Engineering | 40 |
| IV / VII | CS8791 / Cloud Computing | 44 |
| IV / VII | CS8792 / Cryptography and Network Security | 51 |
| IV / VII | MG8591/ Principles of Management | 58 |


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| Year / Sem | Subject Code/ Subject Name | Page No. |
|------------|--|----------|
| I / I | 21CS101/ Problem Solving and Python Programming | 1 |
| | a)Illustrative Programs: Simple Sorting – L+I,PS(Txt) | 1 |
| | b)Mini Project Presentation | 2 |
| II / III | 21CS201 / Computer Organization and Architecture | 3 |
| | a)Interrupts – Collaborative Learning(Seminar) | 3 |
| II / III | 21CS202/Data Structures | 4 |
| | a)Linked list (Insert a node after the given node) | 6 |
| | b) Linked list algorithms - Collaborative Learning(Seminar) | 8 |
| | c)Linked list – Quiz | 10 |
| | d)Queues – Role Play | 13 |
| | e)Binary Search Tree – Quiz | 15 |
| | f)Advanced Non Linear Data Structures – Hashing and Graphs - Quiz | 17 |
| | g) Extensible Hashing -FCR | 19 |
| II / III | 21CS203 / Object Oriented Programming | 20 |
| | a) Reading and Writing File –CL(S) | 21 |
| | b)Radio Buttons –CL(S) | 22 |
| | c)I/O Basics – CL(S) | 23 |
| III / V | 21IT302 / Principles of Cloud Computing | 24 |
| | a)File System GFS, HDFS – CL(S) | 27 |
| | b) Deployment Models – Quiz | 32 |
| | c)Docker, Kubernetes – L+D | 33 |
| | d)Configuration File System GFS, HDFS – CL(S) | 34 |
| III / V | 21PCS10 / Web Technology and Design | 35 |
| | a)Java Script Arrays – CL(S) | 35 |
| | b)Transition and Transformation – L+DE(S) | 36 |
| | c)Internal Linking – L+DE | 37 |
| III / V | 21PCS01 / Data Science and Big Data Analytics | 38 |
| | a) Data Manipulation using PANDAS – L+DE(S) | 39 |
| III / V | 21IT303 / Software Engineering | 40 |
| | a)Developing Use Cases – L+DE(S) | 41 |
| | b)Pattern Based Design – CL(S) | 42 |
| | c) Software Project Management – FCR | 57 |
| | d) Process and Project Metrics - FCR | 57 |
| IV / VII | CS8791 / Cloud Computing | 44 |
| | a)Underlying Principles of Parallel and Distributed Computing – Quiz | 48 |
| | b)Implementation Levels of Virtualization – L+D | 49 |
| | c) Cloud Storage – CL(S) | 50 |
| IV / VII | CS8792 / Cryptography and Network Security | 51 |
| | a)DSS – CL(S) | 53 |
| | b) S/MIME –CL(S) | 54 |
| | C)Transposition Technique : Rail Fence Technique - FCR | 56 |
| | | |
| IV / VII | MG8591/ Principles of Management | 58 |
| | a)Leadership – Role Play | 61 |
| | b) Use of Computers in Management Control – CL(S) | 62 |

 22/08/24
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Department of Information Technology

Academic Year 2023-2024 (Odd Semester)

Batch : 2023-2027

Year /Sem /Sec: I / I/A & B

Course Code / Name: 21CS101 / Problem Solving and Python
Programming

Regulation : 2021

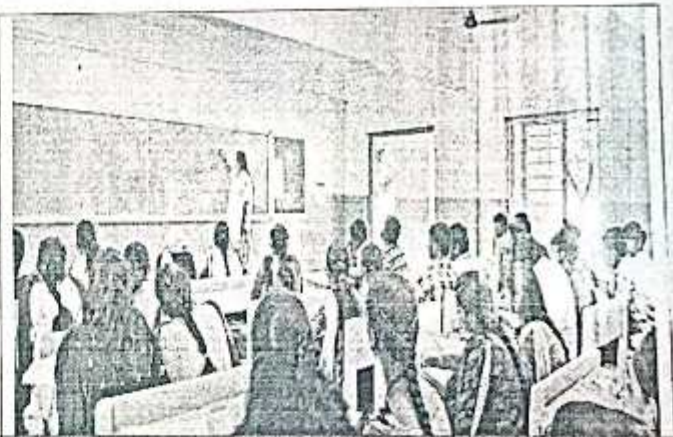
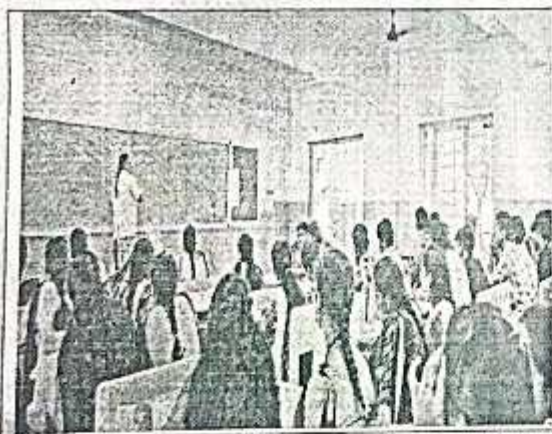
Course In-Charge : Mrs. A. Periya Nayagi, AP – III / IT

L + I, PS (Txt) - "Illustrative Programs : Simple Sorting"

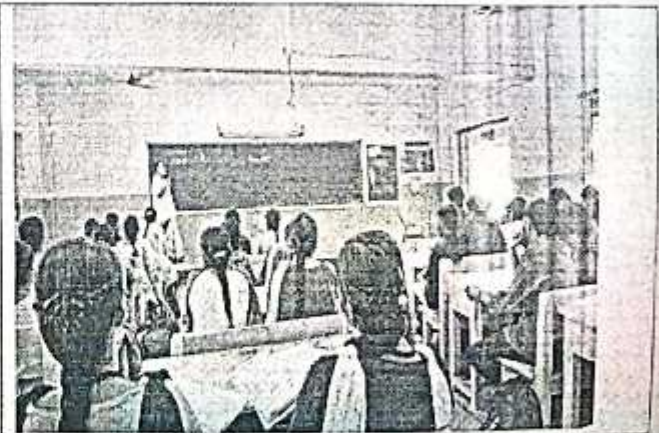
Description: Discussed about how to write a python script to perform sorting of n values using various following sorting techniques:

- Selection Sort
- Insertion Sort
- Merge Sort

These sorting methods were explained with illustrative problems in classroom. Students were given some problems for solving and mistakes made them were discussed and rectified.



Illustrative Programs L + I, PS for B Section on 29.11.2023



Illustrative Programs L + I, PS for A Section on 24.11.2023

A. Periya Nayagi
Course In-Charge

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Department of Information Technology

Academic Year 2023-2024 (Odd Semester)

Batch : 2023-2027

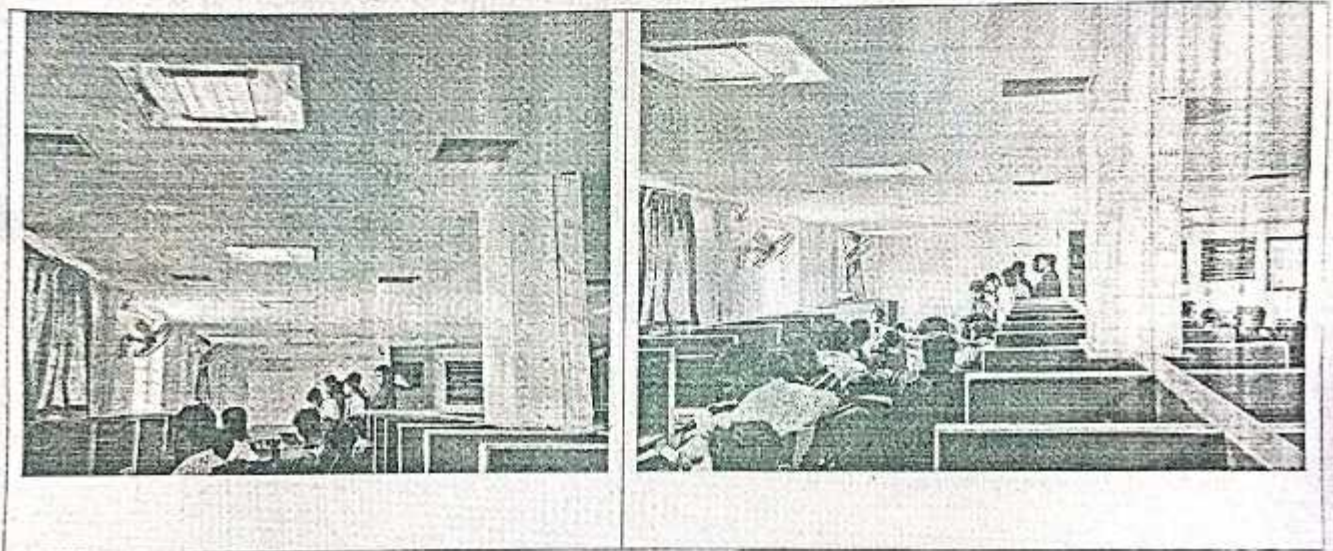
Year /Sem /Sec: I/ I/A & B

Course Code / Name: 21CS101 / Problem Solving and Python
Programming

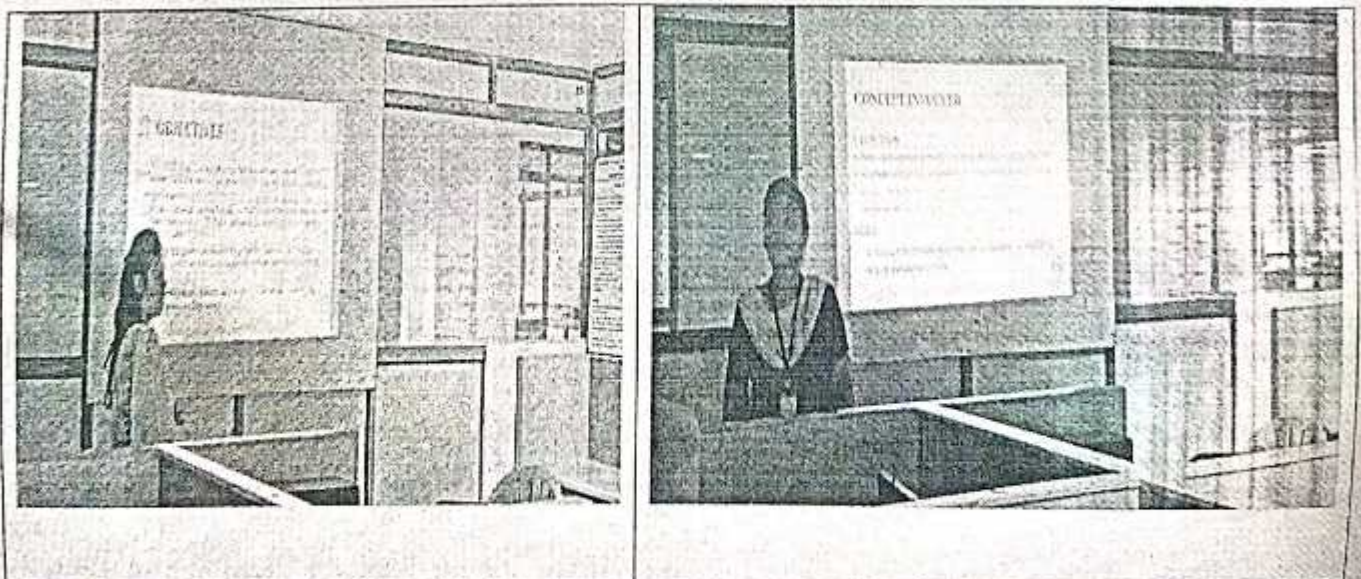
Regulation : 2021

Course In-Charge : Mrs. A. Periya Nayagi, AP – III / IT

Mini Project Presentation



Mini Project Presentation for A Section on 07.12.2023



Mini Project Presentation for B Section on 08.12.2023

A. Periya Nayagi
Course In-Charge

[Signature]
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Velammal College of Engineering and Technology, Madurai - 625009

Department of Mechanical Engineering

Pedagogy Initiatives by Faculty (AY 2023-24 - ODD & EVEN)

| S.No. | Name | Sub.Code | Subject Name | Year & Section | Pedagogy Initiatives | Relevance to COs | Relevance to POs |
|-------|--------------------------|----------|----------------------------|----------------|---|------------------|-------------------------------|
| 1 | Dr. G. Manikandan | 21PME35 | Total Quality Management | IV | Goal Post Game | CO2, CO3, CO4 | PO1, PO2, PO3, PO4, PO5, PO11 |
| | | | | | Deming Principles - Mnemonics | CO1 | PO1, PO2, PO3, PO4, PO5, PO11 |
| | | | | | Brainstorming in QFD | CO4 | PO1, PO2, PO3, PO4, PO5, PO11 |
| | | | | | | | |
| 2 | Dr. V. Anbumalar | 21PME10 | Nondestructive Testing | III | Demonstration of LPT | CO2 | PO1, PO2, PO10 |
| | | 21PME10 | Nondestructive Testing | III | Demonstration of MPT | CO2 | PO1, PO2, PO10 |
| 3 | Dr. M. Maran | 21ME302 | Productivity and Quality | III | Role play - Types of Manager Case Study - TPM Implementation | CO1 CO5 | PO1, PO2, PO11 |
| | | 21ME305 | Metrology and Measurements | III | Lab visit & Demo | CO1 & CO2 | PO1 |
| | | 21ME101 | Engineeing Graphics | I & AIDS | 1. Projection of Planes using models 2. Projection of Solids using models 3. Development of surfaces using models | CO2, CO3 & CO4 | PO1 & PO5 |

| | | | | | | | |
|---|---------------------------|---------|-------------------------------------|----------------|---|----------------|------------------|
| | | MG8091 | Entrepreneurship Development | III & CSE (OE) | 1. Assignment 2 (Great Learning certification) 2. Assignment 3 (Team based case study) | CO1 - CO5 | PO5, PO10 & PO12 |
| 4 | Dr. T. Amuthan | 21ME101 | Engineering Graphics | I & IT B Sec | 1. Projection of Planes using models 2. Projection of Solids using models 3. Development of surfaces using models | CO2, CO3 & CO4 | PO1 & PO5 |
| | | 21ME203 | Engineering Metallurgy (TwP) | II | Lab visit - Jominy End Quench test (Lab demo) | CO1, CO2 & CO3 | PO1 |
| 5 | Dr. B. Varun Kumar | 21ME304 | Heat & Mass Transfer | III/Mech | Lab Demo in Thermal Lab | CO1, CO2, CO3 | PO1 |
| 6 | Mr. R. Karthick | 21ME206 | Kinematics and Dynamics of Machines | II MECH | Lecture with Model - Quick Return Mechanism | CO1, CO2 | PO1, PO2 |