INNOVATIONS BY FACULTY IN TEACHING AND LEARNING

5.5.1 Innovations by Faculty in Teaching

The following processes have been initiated by the Department of Electronics & Communication Engineering to ensure overall involvement of faculty and students for improvement of teaching-learning process.

S. No	Innovation Method	Mode of Teaching/Learning Process	Implementation of the Method
1	Think Pair Share	Think-Pair-Share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to (1) think individually about a topic or answer to a question; and (2) share ideas with classmates. Discussing with a partner maximizes participation, focuses attention and engages students in comprehending the reading material.	**Implementation of Think-Pair-Share Methodology:** 1. Decide upon the text to be read and develop the set of questions or prompts that target key content concepts. 2. Describe the purpose of the strategy and provide guidelines for discussions. 3. Model the procedure to ensure that students understand how to use the strategy. 4. Monitor and support students as they work through the following: **T** : (Think) Teachers begin by asking a specific question about the text. Students "think" about what they know or have learned about the topic. **P** : (Pair) Each student should be paired with another student or a small group. **S** : (Share) Students share their thinking with their partner. Teachers expand the "share" into a whole-class discussion.
2	JAM sessions	JAM session is known as Just a minute session. JAM sessions are conducted in class room will help the students to participate in different topics. Implementation of JAM: JAM sessions are useful to test the communication skills and general knowledge of the Students. To conduct these	•Communication skills •Quick Response •The flow of thoughts and flow of speech •Confidence in thoughts and speech •Time Management

		sessions, the faculty gives some topics and asks the students to speak on it.	
3	Fishbowl	Fishbowl is a strategy for organizing medium- to large-group discussions. Students are separated into an inner and outer circle. In the inner circle or fishbowl, students have a discussion; students in the outer circle listen to the discussion and take notes. This engaging and student-centered strategy builds comprehension of complex texts/ideas while developing group discussion skills. In the "fishbowl," students practice responding to multiple viewpoints. Observations from students in the outer circle provide insight into what makes for effective small-group discussions. Research supports the use of fishbowls as an effective way to engage students with a range of abilities and in multiple settings.	**Implementation of Fish Bowl:** **1.** Choose a central topic or text. Develop an open-ended question to start the discussion. 2. Create a question that makes the central them relevant to the students. 3. Ask for or select 4-5 volunteers to be in the "fishbowl." Only the students in the fishbowl are allowed to talk. 4. After a class demonstration with one "fishbowl", there can be several "fishbowls" organized in the classroom to ensure that all students are engaged. 4. Instruct the outer circle to remain quiet, observe and take notes on the content and process of the inner circle's discussion. 5. The first few times, play the role of the facilitator yourself. Once the process is familiar, select a student facilitator. The facilitator does not participate in the discussion, but poses questions along the way to prompt deeper discussion and to ask sure everyone inside the fishbowl has a chance to talk. 6. Rotate students in and out of the fishbowl throughout the course of the discussion. Set up a procedure ahead of time so students know to expect this rotation. 7. Allow the fishbowl discussion to continue for at least 15- 20 minutes. 8. After all students have rotated through the fishbowl, divide the class into small groups and invite students to debrief. Students can use their observations from the outer circle to highlight strengths of the discussion and make suggestions for ways to engage each other more meaningfully.
4	Think Aloud Pair Problem solving	In this collaborative learning strategy, a team of two members is formed by Faculty. In this team one student will act as Listener who listen the topic or a problem and other student behaves like a problem solver.	Listener give some clue to Problem Solver if they are not succeed they can change their roles.

5	Leading questions	Using questions to teach is an age-old practice and has been a cornerstone of education for centuries. Questions are often used to stimulate the recall of prior knowledge, promote comprehension, and build critical-thinking skills.	**Implementation of** Leading questions 1. Exploratory questioning is used to find out how much students know about the issue under discussion. This type of question may be implemented to introduce a new topic to the audience, review past discussions of a topic, or determine how much students have retained from the previous learning sessions. A broad range of related issues and topics can be evaluated through this method of questioning. 2. Spontaneous questioning is best used when students are naturally curious about the topic or when an ongoing discussion slows. Spontaneous questions are used to probe students' thoughts in an effort to get them to explore their beliefs and assumptions. This type of question prompts students to self-correct, rather than be corrected by the instructor, through reflection on the question being asked. Spontaneous questioning can also be used when an important issue is raised, when students are on the edge of a breakthrough in learning, or when discussion requires clarification. 3. Focused questioning narrows the content down to specific issues on which the teacher would like the audience to reflect. Focused discussion helps to stimulate students intellectually by forcing them to evaluate their thoughts and perspectives. Students are able to experience an ordered dialogue in which they discover and share ideas and insights with regard to the topic.
6	Assignment Practices	Analyze & Preparation	Improving the cognitive abilities.
7	Employability Skills	Training on Technical skills & Soft skills	Employability awareness and readiness
8	E- Learning	NPTEL/COURSERA	Improve engineering education quality, on-tip compatibility, and resources for outside the curriculum

Impact of the above methods:

Implementing the above methods students are able to

- ✓ Relate new material to previous and future topics
- ✓ Provide balance of concrete information
- ✓ Balance practical Problem solving
- ✓ Provide concrete examples of phenomena described by theory
- ✓ Encourage creative solutions
- ✓ Pause to allow time for reflections
- ✓ Use hands on demos when possible

5.5.2 Innovations in Instructional Delivery

i. Course handout – A detailed document listing the name of course, faculty name, contact details of faculty, course description, course prerequisites, Course outcomes, assessment tools, references, etc. is preferred for each theory and laboratory course in the program. The purpose of course handout is to provide the student a complete idea of learning outcomes that can be attained by taking the course. Further, a student will be able to have a clear picture of the intricacies of the subject at the beginning of the semester itself and can plan accordingly.

ii. Teaching Schedule – The faculty provides the teaching schedule which is a tentative plan of coverage of each topic in the course along with the number of hours required for completing the same and the expected date on which the unit will be completed. This is possible only if the faculty has a detailed lesson plan ready, before the semester starts. Thus, it encourages both the students and faculty to be well prepared for the class

iii. Assignments

Examining the Impacts

1. All assignment questions are designed in accordance with the Blooms Taxonomy, based on the achievement of the Course Outcomes and Program Outcomes.

2. Assignment questions are theoretical / designing in nature in order to boost the application level and learning process.

3. Completion of each Unit, students will be given an assignment.

4. Unit-level tasks are graded, and the weighted average of those grades is used in the final internal evaluation.

5. It is recommended that each assignment include at least two to three questions to ensure maximum exposure and improve their analytical skills.

Assignment question paper

MALINENI LAKSHMAIAH WOMENS ENGINEERING COLLEGE (KE)
(Approved by AICTE &Affiliated to JNTU, KAKINADA) PULLADIGUNTA, GU
III B. Tech, I Semester, Assignment – II FEB: 2022 (R16

Max. Marks: 5 **COURSE: Digital Communications (C314)** **Date:**
Branches: ECE **Time:**

Answer all the questions **REG.NO:**

Q.N0	Question description	CO	BTL
1	Derive expression for mutual information and state its properties	CO3	Understand
2	State Shannon's source coding theorem	CO3	Understand
3	Construct a systematic (7, 4) cyclic code set using the generator polynomial $g(x) = 1+x+x^2$.	CO4	Apply

Execution Plan : One assignment per unit during the semester

Expected Outcome : Improving subject knowledge

Improving Learning Ability

iv. Internal Question paper and Key: There are two internal exams conducted in each semester.

As soon as the internal exam is completed, the course coordinator will publish the question paper and key on the student resources. This will help the student to verify their mistakes when the corrected papers are distributed to the students.

Examining the Impacts

1. Each subject's questions are divided into five levels: knowledge, comprehension, application, analysis, evaluation, and synthesis.

2. The questions for each subject are organized so that they correspond to the subject's Course Outcomes.

3. All course objectives are met by taking two tests each semester, according to the University's schedule.

4. Students arrive at a decision about how to prepare for the final test by putting all of the above concepts into practice.

MALINENI LAKSHMAIAH WOMENS ENGINEERING COLLEGE (KE)
(Approved by AICTE &Affiliated to JNTU, KAKINADA) PULLADIGUNTA, GUNTUR-522017

II B.TECH, II SEM II INTERNAL EXAMINATIOS, MAR: 2017 (R16)

Max. Marks: 15 **COURSE: CONTROL SYSTEMS (CS)** **Date : 23/03/2018**

Branches: ECE **Time: 1:30 min**

Answer all the questions **REG.NO:**

Q.N0	Question description	CO	BTL	Marks
1	sketch the bode plot for the transfer function $G(s)H(s)=\frac{ke^{-0.2s}}{S(S+2)(S+8)}$ for a unit feedback system?	C210.3, C210.4	Level 3 (Apply)	5
2	Define the Transfer Function and explain the Polar plot of Lead, Lag, and Lead-Lag network?	C210.5	Level 4 (Analyze)	5
3	State the various properties of State transition matrix? Obtain the T.F of the system having state model $\dot{X}(t)=\begin{bmatrix}-5 & -1\\ 3 & -1\end{bmatrix}X(t)+\begin{bmatrix}2\\ 5\end{bmatrix}U(t)$	C210.5	Level 2 (Understand)	5

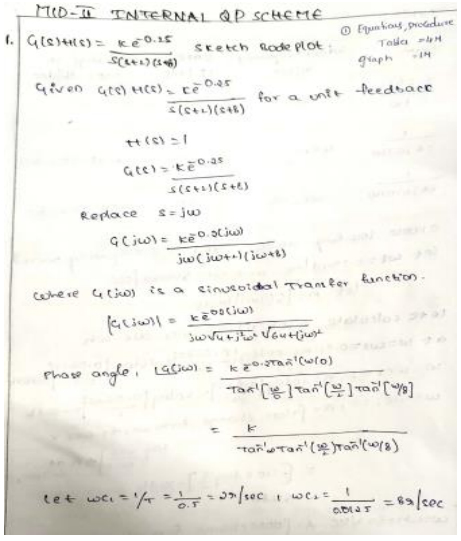
***Level 1(Remembering):** ***Level 2 (Understanding):** ***level 3 (apply):** ***level 4 (analyze):**

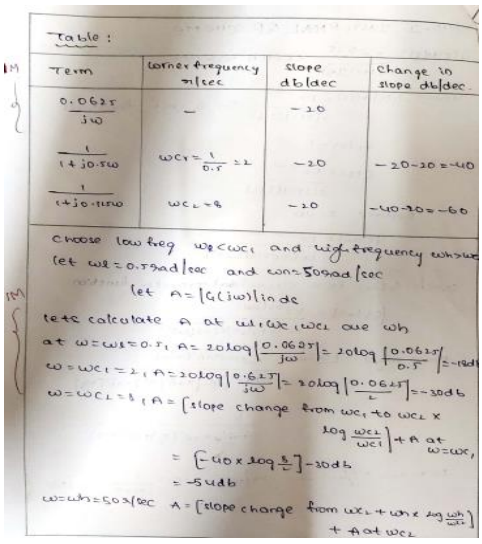
Execution Plan : Two Mid Exams during the semester

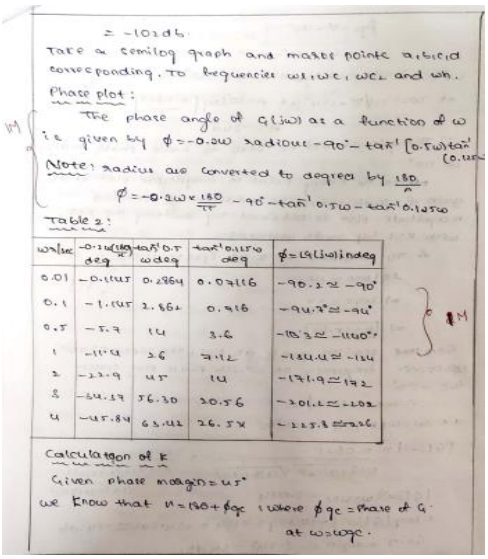
Expected Outcome : Improving subject knowledge

Improving content Re producing Ability

Key For Mid Question Paper







$= -102\,db$.

Take a semilog graph and marks points a, b, c, d corresponding. To frequencies $\omega_1, \omega_c, \omega_{c2}$ and ω_h.

Phase plot:

1M The phase angle of $G(j\omega)$ as a function of ω is given by $\phi = -0.2\omega$ radious $-90° - \tan^{-1}[0.5\omega]\tan^{-1}(0.125\omega)$

Note: radius are converted to degrees by $\frac{180}{\pi}$

$\phi = -0.2\omega \times \frac{180}{\pi} - 90° - \tan^{-1} 0.5\omega - \tan^{-1} 0.125\omega$

Table 2:

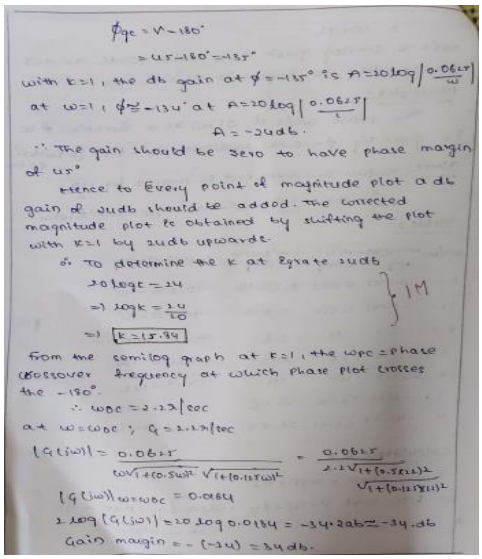
ω r/sec	$-0.2\omega\left(\frac{180}{\pi}\right)$ deg	$\tan^{-1} 0.5\omega$ deg	$\tan^{-1} 0.125\omega$ deg	$\phi = \angle G(j\omega)$ in deg
0.01	−0.1145	0.2864	0.07116	$-90.2 \simeq -90°$
0.1	−1.145	2.862	0.716	$-94.7° \simeq -94°$
0.5	−5.7	14	3.6	$-113.3 \simeq -1140°$
1	−11.4	26	7.12	$-134.4 \simeq -134$
2	−22.9	45	14	$-171.9 \simeq 172$
3	−34.37	56.30	20.56	$-201.2 \simeq -202$
4	−45.84	63.42	26.54	$-225.8 \simeq -226$

1M

Calculation of K

Given phase margin $= 45°$

we know that $\gamma = 180 + \phi_{gc}$, where ϕ_{gc} = phase of G at $\omega = \omega_{gc}$.



$\phi_{gc} = \gamma - 180°$

$= 45 - 180° = -135°$

with $K=1$, the db gain at $\phi = -135°$ is $A = 20\log\left|\frac{0.0625}{\omega}\right|$

at $\omega = 1$, $\phi \simeq -134°$ at $A = 20\log\left|\frac{0.0625}{1}\right|$

$A = -24\,db$.

∴ The gain should be zero to have phase margin of 45°

Hence to every point of magnitude plot a db gain of 24db should be added. The corrected magnitude plot is obtained by shifting the plot with $K=1$ by 24db upwards.

∴ To determine the K at Egrate 24db

$20\log K = 24$

$\Rightarrow \log K = \frac{24}{20}$

$\Rightarrow \boxed{K = 15.84}$

1M

From the semilog graph at $K=1$, the ω_{pc} = phase crossover frequency at which phase plot crosses the $-180°$.

∴ $\omega_{pc} = 2.2$ r/sec

at $\omega = \omega_{pc}$; $G = 2.2$ r/sec

$|G(j\omega)| = \frac{0.0625}{\omega\sqrt{1+(0.5\omega)^2}\sqrt{1+(0.125\omega)^2}} = \frac{0.0625}{2.2\sqrt{1+(0.5\times 2.2)^2}\sqrt{1+(0.125\times 2.2)^2}}$

$|G(j\omega)|_{\omega=\omega_{pc}} = 0.0184$

$2\log|G(j\omega)| = 20\log 0.0184 = -34.2\,db \simeq -34\,db$

Gain margin $= -(-24) = 34\,db$.

5.5.3. Innovative Instructional Methods

The college is envisaging innovative instructional methods mentioned below for overall improvement of the teaching learning process

i. Integrating NPTEL lectures with classroom sessions

ii. Encouraging students to participate in MOOCS along with course Instructions

SWAYAM-NPTEL

SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

The main benefits of participating in an online course under SWAYAM NPTEL are:

1. **Students: credit transfer and better resume**
2. **Faculty: Refresher courses, AICTE recognized FDP courses**
3. **Working professionals: For up skilling and re skilling**

Figure 5.5.3.1 NPTEL-SWAYAM Local Center

NATIONAL PROGRAMME ON TECHNOLOGY ENHANCED LEARNING

NPTEL

2018-06-25

To
The Principal
MALINENI LAKSHMAIAH WOMEN'S ENGINEERING COLLEGE
PRATHIPADU ROAD, PULLADIGUNTA
GUNTUR - 522017
ANDHRA PRADESH

Dear Sir/Madam,

Sub: Establishing SWAYAM NPTEL Local Chapter in your college

Greetings from the NPTEL office.

This is to acknowledge the receipt of your letter accepting to host SWAYAM NPTEL Local Chapter in your institution.

The **Single Point of Contact (SPOC)** nominated from your college is

Name of SPOC: G.RAMA SWAMY
Designation: Professor
Department:CSE
Contact No(s):9248834836
E-mail id: mlv-ecnptel@gmail.com

We wish to inform you that all future correspondence related to NPTEL contents and online courses will be made to the afore-mentioned SPOC. He/she will be routinely updated with all the latest NPTEL initiatives which then may be circulated among the students.

We are also happy to share that a dedicated SWAYAM NPTEL Local Chapter web page is being created and your institution will have a separate page on it (http://nptel.ac.in/LocalChapter/).

Thanking you.

Sincerely

Prof. Andrew Thangaraj
NPTEL Coordinator

Use of ICT (Information and Communication Technologies):

- NPTEL video lectures which are needed to the curriculum are made accessible in the Library.
- Open course ware, webinars from national and international organizations are presented to the students.

ICT class integrates basic types of media such as text, audio, video, and images into a learning environment, resulting in a strong teaching tool. As a result, the learners are able to focus more on the concepts. It also improves students in better thinking and analyzing concepts.

Plan of Action:

The teacher uses Software Tools/Animation/Videos to demonstrate some topics which are in three dimensional structures in their regular teaching procedure.

Expected Outcomes:

1. Traditional teaching Methods is changed into straight forward method for delivering the subject knowledge.
2. Students will have a better idea about designing

5.5.4 Self Learning Methods:

To improve the effectiveness of the teaching and to make teaching more effective to the current generation of the students, the Institute continuously encourages the faculty members to develop/adopt innovative and self learning methods of teaching. The following methods which are implemented over the past few years depending on the nature of the subject being taught:

Use of ICT (Information and Communication Technologies):

- NPTEL video lectures which are needed to the curriculum are made accessible in the Library.
- Open course ware, webinars from national and international organizations are presented to the students.

ICT class integrates basic types of media such as text, audio, video, and images into a learning environment, resulting in a strong teaching tool. As a result, the learners are able to focus more on the concepts. It also improves students in better thinking and analyzing concepts.

Plan of Action:

The teacher uses Software Tools/Animation/Videos to demonstrate some topics which are in three dimensional structures in their regular teaching procedure.

Expected Outcomes:

3. Traditional teaching Methods is changed into straight forward method for delivering the subject knowledge.
4. Students will have a better idea about designing

II .OERs (Open Educational Resources)

The college library has a digital section where e- journals and e-books can be accessed by the students and faculty. Faculty members are encouraged to make use of e-learning material available on the internet for the hands on information.

S.No	Resources	e-Resources URL/Facility
1.	IEEE	https://ieeexplore.ieee.org/Xplore/home.jsp
2.	DELNET	https://www.delnet.in/ http://www.delnet.nic.in/ **Delnet User Name: apmlwec**
3.	SWAYAM Prabha (Free32 DTH Channels)	https://www.swayamprabha.gov.in/
4.	World e-Book Library	http://worldebooklibrary.org/
5.	Compact Discs (CDs)	994
6.	NPTEL Videos	https://nptel.ac.in/

7.	Project Gutenberg	https://www.gutenberg.org/
8.	Open Library	https://openlibrary.org/
9.	PDF Drive	http://www.pdfdrive.net/
10.	Good Reads	https://www.goodreads.com/
11.	Many Books	https://manybooks.net/
12.	Book Fi	http://en.bookfi.net/
13.	Project Laboratories	All departments are equipped with state-of-the art equipment/software to do mini and major projects.
14.	Digital Library	All e resources including e-Books can be accessed at digital library.

iii. Experiential Learning through Field Visits, Internships and Project work

Lab assignments, Projects and Internships are most commonly used forms of experiential learning at the Institute. The main objective is to provide students a direct experience and exposure to a work place setting, usually related to their career interests and guidance of professionals in the respective field.

The Impact of Method:

Through such exposure, undergraduate students are able to appreciate and understand practical issues related to time and effort optimization, cultural contexts determining product design, availability of skilled resources, encountered in the real world. As a result, the performance of the student in job interviews and technical competition is found to improve considerably.

Usage of Method: Students are continuously sent for industrial visits and internships.

Table5.5.4.1 Experiential Learning through Field Visits list

Academic year 2019-2020			
S.No	**Year & Branch**	**Industry Visited**	**Outcome**
1	II ECE	All India Radio Prasara Bharathi Vijayawada	Students gain knowledge in real time transmitting and receiving RF signal equipment

2	III ECE	Efftronics Pvt Ltd	Students are able to get the knowledge on micro controllers, Signals and systems, Railway signaling
3	IV ECE	SDSC-SHAR Sriharikota	Students are able to gain knowledge in real time Satellite, Space shuttles, Radars.
4	II ECE	Doordarshan Kendra Vijayawada	Students are able to gain knowledge in real time mixing of audio and video signal, secondary Transceivers working
5	III ECE	Radar Station Machilipatnam	Students are able to gain knowledge of weather radar practically in real time conditions

Figure 5.5.4.1 Experiential Learning through Field Visits

iv. Project Based Learning:

Project Based Learning is a **teaching** method in which students' gains knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge.

The goals of High Quality Project Based Learning are to:

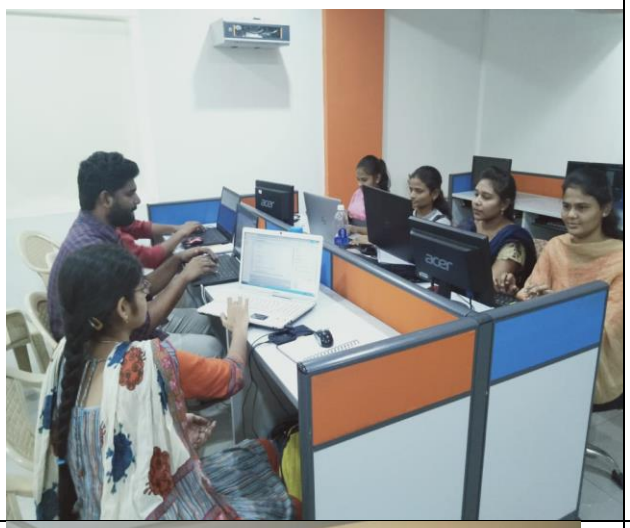
1. Teach academic content knowledge and skills, and develop deeper understanding.

2. Build 21st century success skills such as critical thinking, problem solving, **communication**, collaboration and **creativity / innovation**.

Figure 5.5.4.2 Experiential Learning through projects

v. Experiential Learning through Internships

Figure. 5.5.4.3. Experiential Learning through Internships



Selected candidates for Idealabs Internship

Sl.No	Roll	Name	Year	Dept	College	Phone	Email
1	167W1A0510	Keerthikousik	3	CSE	MPES	7382975330	keerthikousik.g@gmail.com
2	157W1A0412	Boppudi Vineeth	4	ECE	MPES	7095150557	vineethboppudi23@gmail.com
3	15851A0423	P.Alekya	4	ECE	MLEC S.KONDA	9681611498	alekya423p@gmail.com
4	16KE1A0407	A.Pooja	3	ECE	MLWEC	9642533286	arepooja123@gmail.com
5	167W1A0456	K.Giridhar Krishna	3	ECE	MPES	7989781298	myeng20162020@gmail.com
6	16851A0578	N.Ramanjanyulu	4	CSE	MLEC S.KONDA	7095D14162	ramursvi578@gmail.com
7	15KE1A0467	P.Anusha	4	ECE	MLWEC	9490281175	anushapotla966@gmail.com
8	16851A0550	K.Siva Lakshmi	4	CSE	MLEC S.KONDA	9705497803	kallurisvalakshmi@gmail.com
9	167W1A0426	S.Divya Sri	3	ECE	MPES	7013182479	
10	16KE1A0477	P.Siva Parvathi	3	ECE	MLWEC	6301270013	paru.parvathi2910@gmail.com

iDEALABS BLOCK91

TO WHOMSOEVER IT MAY CONCERN

Ms. Are Pooja has worked with us as an Intern from Duration 13th May, 2019 to 28th June,2019. I Have known her in my capacity as **Technical Director of Idealabs FutureTech Ventures.** She has worked as Intern as part of the technical team working on an application for **"Maintenance of Student Records, peer to peer lending and dairy form** on **Blockchain** Domain.

If you'd like to discuss her attributes in more detail, please don't hesitate to contact me on my e-mail id pankajdiwan@idealabsftv.in.

For IDEALABS FutureTech Ventures

Pankaj Diwan
Technical Director

SUPRAJA

ETHICAL HACKING & CYBERSECURITY INTERNSHIP OFFER LETTER

SUPRAJA TECHNOLOGIES

5.5.5. Inclusive Classroom Activities

i) Peer to peer teaching*:* Peer to peer teaching is an effective teaching method that can be used in the classroom/ lab to enhance learning. This would enable the students to revise their learning and be able to consolidate it by teaching it to fellow students. These also improve their subject knowledge as well as increase their confidence. The faculty role would be facilitating the class in delivering the topic. There are many benefits to peer teaching:

Consolidate Learning: By teaching to a peer, students review their own learning, which allows them to strengthen their own knowledge and skills.

Increase Confidence: This type of learning activity boosts self-confidence because students realize that the classroom teacher perceives them as experts and trusts them enough to share their expertise with a peer.

Develop Communication Skills: Students must use strong communication skills to be able to provide clear directions, listen to feedback, and then adjust the next set of instructions accordingly so that their peer is successful.

Assess Learning: The teacher is able to assess students' understanding of the material based on their ability to share their knowledge and skills with a fellow peer, that could not be accomplished using a paper and pencil test.

ii) Seminars method

Seminars typically take place over the course of a few days and involve cooperative discussion. It helps in improving communication skills, gaining knowledge, renewing motivation and confidence.

Figure 5.5.5.2.1 Seminars by students:

Figure 5.5.5.2.2.Seminars by Experts

సైబర్ నేరాలతో అప్రమత్తం

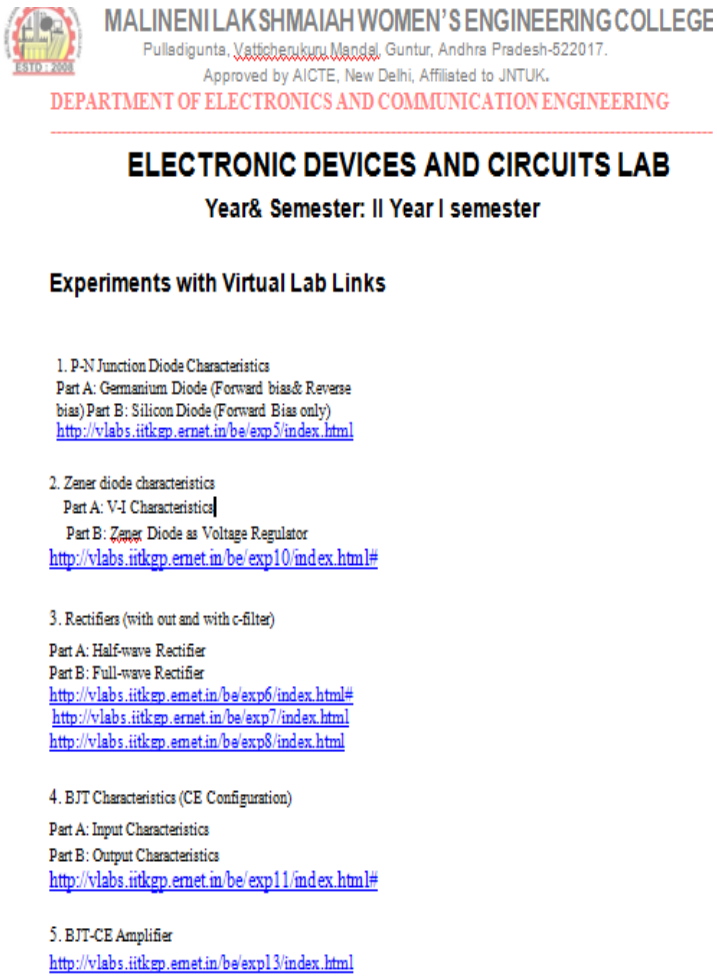
పుల్లడిగుంట (వట్టిచెరుకూరు), న్యూస్‌టుడే: యువత సైబర్ నేరాల పట్ల అప్రమత్తంగా ఉండాలని ఎండ్ నౌ ఫౌండేషన్ వ్యవస్థాపకులు అనిల్ రాచమల్లు అన్నారు. మండలంలోని పుల్లడిగుంటలోని మలినేని లక్ష్మయ్య మహిళా ఇంజినీరింగ్ కళాశాలలో గురువారం సైబర్ నేరాలపై నిర్వహించిన అవగాహన సదస్సులో ఆయన పాల్గొని పలు సూచనలు చేశారు. సామాజిక మాధ్యమాల్లో మనం చిన్న పొరపాటు చేసినా భారీ మూల్యం చెల్లించుకోవాల్సి వస్తుందని హెచ్చరించారు. కళాశాల డైరెక్టర్ పి.నాగేశ్వరరావు, ప్రిన్సిపల్ శ్రీనివాసకుమార్, అకడమిక్ ప్రొఫెసర్ జె.కిశోర్‌బాబు, జిజ్ఞాస ఫౌండేషన్ సీఈవో భార్గవ్ పాల్గొన్నారు.

Impact of the Method:

These seminars motivated the young women engineers in the field of Electronics. Students are able to understand the growing areas of technology and also the research fields. After completion of these seminars students got **confidence** on their areas.

Iii .Lab videos: These videos provide a means of interactive instruction and are a very flexible medium. Having the ability to stop, start and rewind is absolutely invaluable. It provides the option to stop each video and challenge students to predict the outcome of demonstration, and elaborate on, or debate a point of historical reference. And also have the option to rewind a section of the video to review a segment to ensure that students understand experiment. Also can ensure to add further interactivity by copying activities, conducting discussions or repeating demonstrations and experiments in the lab. They also use the **Virtual lab** sessions for better understanding of experiments.

Figure 5.5.5.3.1.VIRTUVAL LAB LINKS:



MALINENI LAKSHMAIAH WOMEN'S ENGINEERING COLLEGE

Pulladigunta, Vatticherukuru Mandal, Guntur, Andhra Pradesh-522017.

Approved by AICTE, New Delhi, Affiliated to JNTUK.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ELECTRONIC DEVICES AND CIRCUITS LAB

Year& Semester: II Year I semester

Experiments with Virtual Lab Links

1. P-N Junction Diode Characteristics
Part A: Germanium Diode (Forward bias& Reverse bias) Part B: Silicon Diode (Forward Bias only)
http://vlabs.iitkgp.ernet.in/be/exp5/index.html

2. Zener diode characteristics
Part A: V-I Characteristics
Part B: Zener Diode as Voltage Regulator
http://vlabs.iitkgp.ernet.in/be/exp10/index.html#

3. Rectifiers (with out and with c-filter)
Part A: Half-wave Rectifier
Part B: Full-wave Rectifier
http://vlabs.iitkgp.ernet.in/be/exp6/index.html#
http://vlabs.iitkgp.ernet.in/be/exp7/index.html
http://vlabs.iitkgp.ernet.in/be/exp8/index.html

4. BJT Characteristics (CE Configuration)
Part A: Input Characteristics
Part B: Output Characteristics
http://vlabs.iitkgp.ernet.in/be/exp11/index.html#

5. BJT-CE Amplifier
http://vlabs.iitkgp.ernet.in/be/exp13/index.html

(iv) Cross word puzzles and Role-plays:

(a) **Cross word puzzles*:*** Puzzle-based learning refers to the use of puzzles in order to train higher-order thinking skills like problem-solving.

(b) **Role-play** is a **technique** that allows students to explore realistic situations by interacting with other people in a managed way in order to develop experience and trial different strategies in a supported environment.

v) Group discussions

In this method, the student becomes very active in thinking as well as sharing, where the teacher acts as a facilitator. It is initiated by introducing the topic, setting a context and expected outcomes for the discussion. The discussion is moderated and evaluated by faculty / appointed student leaders. The discussion closes with a follow-up writing activity in order to reinforce the conclusions drawn.

The impact of the method:

- Develops critical thinking and creativity among students
- Develops healthy interaction among students
- Develops communication skills
- Develops an ability to appreciate others

Usage of the method: Most of the Humanities and Management courses are taught to the students using this method.

Figure 5.5.5.5.1.Group discussions

d) Technical quiz

A quiz is a form of game or mind sport in which the players (as individuals or in teams) attempt to answer questions correctly. It promotes active learning and provides motivational impetus. It is conducted in classroom through direct questionnaire.

e) Debates:

Students involved in Speech & Debate develop higher-level thinking skills through application, analysis, synthesis, evaluation and creativity. They come to understand what they believe about the issues that confront them in our culture and why. Increased problem-solving abilities and overall academic performance

In general, the benefits of debate include:

- Gaining broad, multi-faceted knowledge cutting across several disciplines outside the learner's normal academic subjects.
- Increasing learners' confidence, poise, and self-esteem.

- Providing an engaging, active, learner-centered activity

Figure 5.5.5.5.2.DEBATES

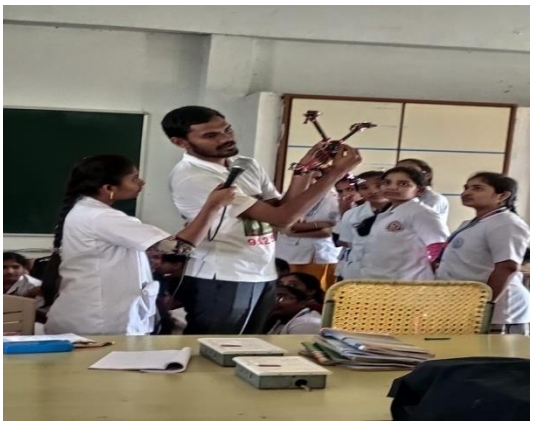
f) Prototype models developed

The following models were developed by the faculty from their research work for explaining the concepts of

- PCB Design,
- Arduino
- Embedded system

- Drones

Figure 5.5.5.5.3.Prototype models



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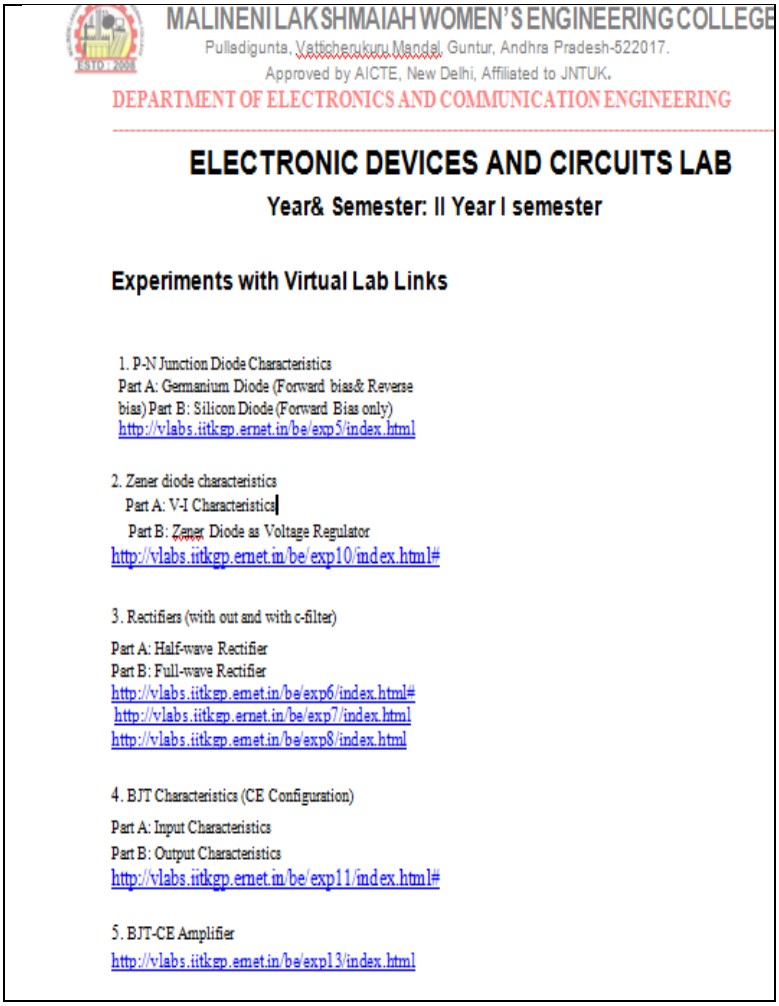

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Figure 5.5.5.5.2.DEBATES

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- Drones

Figure 5.3.PROTOTYPE MODELS

Skill Development Initiatives: additional topics beyond curriculum

Figure. 5.5.5.5.4. Siemens Training (Skill Development Initiatives) APSSDC

- Symposiums are organized to share their innovative ideas with others.
- For the development of entrepreneurial skills among the students to start their own enterprise, activities are conducted by the entrepreneur development cell of the college.
- Literary and cultural committee organizes programs & competitions to improve all round Personality of students.
- Department organizes technical events through professional societies like ISTE to explore the technical skill set.

ii. Employability Training

The Department of Electronics and Communication Engineering of Malineni Lakshmaiah Women's Engineering College has been delivering technical and soft skills training to students in order to improve their employability. Internal faculty conducts the training, which includes Aptitude and soft skills. The Internal Training Team will assess the students' technical skills, and students are categorized into domain-specific, technology-specific, and interest-specific. Training will be in corporate after the regular academic work.

We provide company specific training with **Byte XL**, **Condura** to cover soft skills, Technical skill, and personality development skills under **employable** skills.

Table.5.5.5.5.4.1.Internal Faculty /Trainers/Training Support

S.No	Name of the Faculty/Trainer	Domain	Company
1	Mr.K.Haribabu	Aptitude training	Core/software
2	Mr.P.Narayana swami	Department coordinator for all trainings	Core/software
3	Mr.T.Venkata rao	Youth Emplobility Program(YEP)	TCS
4	Mr.V.Ajay Kumar	Youth Emplobility Program(YEP)	TCS

Link for aptitude video classes Prepared by Mr.K.Haribabu

https://www.youtube.com/c/HSspace

Table.5.5.5.5.4.2.External Trainers/Training Support from BYTE XL

Impact of the Training: The Certifications Outcomes after Training

iii. **HACKATHONS**

Hackathons are conducted implement the ideas in software or hardware. Hackathons tend to have a specific focus. Hackathons typically start with communication via a presentation or a web page from the hosting organization that mentions the objectives, terms, and details of the hackathon.

We are conducted Hackathons, State level Hackathons on Block chain Technology and IoT. Our Students are participated in central Hackathons. Students secured 5th place in International Block chain Congress held at Hyderabad.

Table : List of Boot camps / Hackathons conducted department Level

S.No	Event Name	Area of Hackathon	Date of Event
1	Block chain boot camp	Etherium	3-1-2018 to 4-1-2018
2	Block chain hackathon	Etherium	20-1-2018 to21-1-2018
3	Block chain boot camp	Etherium	29-9-2018 to30-9-2018
4	Block chain hackathon	Etherium	29-9-2018 to30-9-2018
5	Block chain boot camp	Hyper ledger	9-2-2019 to 10-2-2019
6	Block chain hackathon	Hyper ledger	19-2-2019 to20-2-2019
7	BLOCKATHON	State level Hackathon	9-3-2019 to 10-3-2019
8	IoT boot camp	Internet of Things	22-8-2019 to 28-8-2019
9	IoT hackathon	Internet of Things	10-9-2019 to11-9-2019

HACKATHONS

Impact of the Method:

PROJECT EXPO

LEARNING BY DOING

THINK PAIR SHARE