KRISHNA UNIVERSITY

MACHILIPATNAM

TWO – WEEK VALUE ADDED COURSE

COMMUNICATION ELECTRONICS

Course Code: **20PHY-VAC-CME**

Duration: TWO - WEEKS

02/01/2023 to 31/01/23

DEPT OF PHYSICS

KRISHNA UNIVERSITY-DR.M.R.APPA ROW COLLEGE OF POST GRADUATION STUDIES-NUZVID

HEAD
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Krishna University
Dr.M.R.APPA ROW College of
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- A Brief Report

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KRISHNA UNIVERSITY

Prof. V.Venkatramu, Ph.D.,
Principal (I/c)
Dr.M.R. APPA ROW College of P G Studies,
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No/KRUCPGS/VAC/2022 **Date:** 04/11/2022

CIRCULAR

This is to inform that syllabus for the valued added course for III and I SEM students submitted by the HOD of Physics Dept. is approved. Hence, the HOD/Coordinators are requested to complete valued added course as per the university regulations.

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Copy to the:

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Hod/Coordinator, Dept of Physics
PA to The Registrar
PS to the Vice-Chancellor

KRISHNA UNIVERSITY

Prof. V. Venkatramu
Head of the Department
Physics
KRU Dr. M.R. Appa Row CPG Studies
Nuzvid-521 201

Mobile: +91-8639257248
Email: vvramuphd@gmail.com

Date: 04/11/2022

CIRCULAR

A two week value added course entitled "COMMUNICATION ELECTRONICS" has been introduced b the Department of Physics for the Academic Year 2022-23 for III Semester M.Sc. Physics students. All the III Semester M.Sc. Physics students are here by informed that to enrol/register for the value added course conducted by the department. The course duration from 02-01-2023 to 31-01-2023.

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Two – Week Value-added Course on

COMMUNICATION ELECTRONICS

Organized by

Department of Physics

Chief Patron
Prof. K. B. Chandra Sekhar
Vice-Chancellor
Krishna University

Patron
Prof. D. Surya Chandrarao
Rector of Krishna University

Patron
Dr. M. Rami Reddy
Registrar
Krishna University

Principal
Dr. V. Venkatramu
Head, Depart of Physics

Course Coordinator
Dr. P. Raghava Rao
Assistant Professor (Contract)
Depart of Physics
Dr.MR Appa Row College of Post Graduation Studies::Nuzvid

KRISHNA UNIVERSITY-DR.M.R.APPA ROW COLLEGE OF POST GRADUATION STUDIES-NUZVID
DEPT OF PHYSICS

TWO – WEEK VALUE ADDED COURSE

Title of the course: COMMUNICATION ELECTRONICS (20PHY-VAC-CME)
Duration: Total: Two - Weeks
Resource Faculty: Dr. P. Raghava Rao
Course Coordinator: Dr. P. Raghava Rao
Year/Batch: II year (2022-23)
Course Objectives:

- To learn about the modulation and demodulation techniques.
- 2. The students are expected to demonstrate the ability to Convert analog signals to digital format and describe Pulse and digital Modulation techniques.
- 3. To learn about hybrid parameters.
- 4. Evaluate the performance levels (Signal-to-Noise Ratio) of AM, FM and PM systems.

Allocation of Total Hours for Each Unit:

S.No	UNIT No & TITLE	Theory(Hrs)
1	Unit-I: Amplitude Modulation	05
2	Unit-II: Pulse Modulation	05
3	Unit-III: Special Communication Circuits	05

Course Syllabus:

UNIT I: Amplitude Modulation (AM)

Introduction, Amplitude modulation, modulation index, Frequency spectrum, Average power for sinusoidal AM, Amplitude modulator and demodulator circuits, Double side band suppressed carrier (DSBSC) Modulation, Super heterodyne receiver.

Single Side Band Modulation (SSB): SSB principles, Balanced Modulator, SSB generation

UNIT II :Pulse Modulation :

Digital Line Codes: Symbols, Functional notation for pulses, Line codes and wave forms: RZ, NRZ, Polar, Unipolar, AMI , HDBn and Manchester codes, M-ary encoding, Differential encoding ,sample and hold circuits, Sampling theorem, Principles of pulse Amplitude Modulation (PAM) and Pulse Time Modulation(PTM).

UNIT 3: Special Communication Circuits:

Tuned amplifiers :Single tuned amplifier-Hybrid π – equivalent for the BJT, Short circuit current gain for the BJT in CE and CB amplifiers, CE and CB tuned amplifiers, Cascade amplifier. Mixer Circuits : Diode mixer, IC balanced mixer. Filters : Active filters, Ceramic, Mechanical and crystal filters.

Course learning outcomes (CLO):

The student will be able to

- Students will understand the basic concepts of AM and FM radio transmission and reception.
- Students understand the analog pulse modulation techniques and digital modulation technique.
- Students understand the various parameters of hybrid equivalent circuits.

Text Books:

1. Electronic Communications D. Roody and John Coolin
2. Electronic Communications Systems G. Kennedy
3. Modern Analog& Digital Communications B. P. Lathi

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Resource Faculty: Dr. P. Raghava Rao
Course Coordinator: Dr. P. Raghava Rao
Year/Batch: II year (2022-23)
Semester: III

TIME TABLE

Time	10.00-11.00am	11.00-12.00PM	12.00-01.00PM	2.00-3.00PM	3.00-4.00PM	4.00PM-5.00
MON						20PHY-VAC-CME
TUE						20PHY-VAC-CME
WED						20PHY-VAC-CME
THUR						20PHY-VAC-CME
FRI						20PHY-VAC-CME
SAT						20PHY-VAC-CME

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Course Coordinator: Dr. P. Raghava Rao
Year/Batch: II year (2022-23)
Semester: III

Student Enrolment form

S.No.	Name of the Student	Regd. No.	Signature
1	Dasari Prasantha Vali	Y21PHY245001	D. Prasantha Vali
2	Gadde Sireesha	Y21PHY245002	G. Sireesha
3	Meda Mahesh	Y21PHY245003	M. Mahesh
4	Mikkili Supriya	Y21PHY245004	M. Supriya
5	Sodadasi Bhagya Sri	Y21PHY245005	S. Bhagya Sri
6	Thummalapalli Sagar	Y21PHY245006	T. Sagar
7	V.V.S.N. Mounika	Y21PHY245007	V.V.S.N. Mounika

Course Coordinator

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DEPT OF PHYSICS
TWO – WEEK VALUE ADDED COURSE

Title of the course: COMMUNICATION ELECTRONICS (20PHY-VAC-CME)
Duration: Total: Two - Weeks
Resource Faculty: Dr. P.-Raghava Rao
Course Coordinator: Dr. P. Raghava Rao
Year/Batch: II year (2022-23)
Semester: III

STUDENT ATTENDANCE

Date / Name of the Student	22/10/23	23/10/23	24/10/23	25/10/23	26/10/23	27/10/23	28/10/23	30/10/23	31/10/23	01/11/23	02/11/23	03/11/23	04/11/23	06/11/23	07/11/23	Signature of the student
Dasari Prasantha Vali	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	D. Prasantha Vali
Gadde Sireesha	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	G. Sireesha
Meda Mahesh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	M. Mahesh
Mikkili Supriya	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P	M. Supriya
Sodadasi Bhagya Sri	P	P	P	P	P	P	P	P	A	P	P	A	P	P	P	S. Bhagya Sri
Thummalapalli Sagar	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	T. Sagar
V.V.S.N. Mounika	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	V.V.S.N. Mounika

P. Raghava Rao
Course Coordinator

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Title of the course: COMMUNICATION ELECTRONICS (20PHY-VAC-CME)
Duration: Total: Two - Weeks
Resource Faculty: Dr. P. Raghava Rao
Course Coordinator: Dr. P. Raghava Rao
Year/Batch: II year (2022-23)
Semester: III

Time: 2 hour **Max. Marks: 50**

MODEL QUESTION PAPER

SECTION – A

Answer any **FOUR** questions. Each question carries **5 marks.** **4X5 = 20Marks**

1.
2.
3.
4.
5.
6.
7.
8

SECTION – B

Answer any **THREE** questions. Each question carries **10 marks 3 x 10 = 30Marks**

1. (A)

(or)

(B)

2. (A)

(or)

(B)

3. (A)

(or)

(B)

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Year/Batch: II year (2022-23)

Day wise schedule course module

S.No.	Date	Topic to be cover
1	02/01/2023	Introduction, Amplitude modulation, modulation index
2	03/01/2023	Frequency spectrum, Average power for sinusoidal AM
3	04/01/2023	Amplitude modulator and demodulator circuits
4	05/01/2023	Double side band suppressed carrier (DSBSC)
5	06/01/2023	Modulation, Super heterodyne receiver
6	07/01/2023	Digital Line Codes: Symbols, Functional notation for pulses
7	09/01/2023	Line codes and wave forms: RZ, NRZ, Polar, Unipolar
8	10/01/2023	AMI , HDBn and Manchester codes, M-ary encoding, Differential encoding
9	19/01/2023	sample and hold circuits, Sampling theorem
10	20/01/2023	Principles of pulse Amplitude Modulation (PAM) and Pulse Time Modulation(PTM)
11	21/01/2023	Tuned amplifiers :Single tuned amplifier
12	24/01/2023	Hybrid π – equivalent for the BJT, Short circuit current gain for the BJT in CE and CB amplifiers
13	25/01/2023	CE and CB tuned amplifiers, Cascade amplifier
14	27/01/2023	Mixer Circuits : Diode mixer, IC balanced mixer. Filters
15	28/01/2023	Active filters, Ceramic, Mechanical and crystal filters

Course Coordinator

A BRIEF REPORT

- Department of Physics had organized a Two Week Value Added Course in " *COMMUNICATION ELECTRONICS* " to the students of III SEM. (A.Y.2022-2023)
- The program is conducted after the regular class work is over.
- The duration of the class is one & two hour and was conducted for 15 Days.
- 7 students participated in the program.
- Students were supplied with the necessary study material
- At the end of the programme, A Grand Test was conducted and it was evaluated.
- Certificates were issued to the participants.
- Dr. P. Raghava Rao is the resource person of this programme.

P. Raghava Rao

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Certificate of Completion

This certificate is awarded to:

Mr/Miss/Mrs_____ *for the successful completion of Two – Week Valued Course in* COMMUNICATION ELECTRONICS [20PHY-VAC-CME]" *under Department of Physics,* Krishna University DR. M.R. Appa Row College of Post Graduation Studies, Nuzvid-521201.

COORDINATOR

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Certificates