



# D.N.R. COLLEGE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE, New Delhi, Affiliated to JNTUK, Kakinada)

Accredited by NAAC with "B<sup>++</sup>" Grade

Balusumudi, Bhimavaram, W. G. Dist., A.P., PIN-534 202

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Academic Year 2023-2024

ACADEMIC CALENDAR FOR II, III & IV B.TECH CE II SEM

Week No.	MONTH	Week Days							No. of Working Days			Events
		MON	TUE	WED	THU	FRI	SAT	SUN	II	III	IV	
1	February		1	2	3	4	5	6	0	0	0	14 <sup>th</sup> 2 <sup>nd</sup> Semester Starts for II, III & IV B.Tech CE.
2		7	8	9	10	11	12	13	0	0	0	
3		14	15	16	17	18	19	20	6	6	6	
4		21	22	23	24	25	26	27	6	6	6	
5		28							1	1	1	
6									0	0	0	
7	March		1	2	3	4	5	6	4	4	4	1 <sup>st</sup> Mahasivaratri 2 <sup>nd</sup> Attendance review 18 <sup>th</sup> Holi
		7	8	9	10	11	12	13	6	6	6	
9		14	15	16	17	18	19	20	5	5	5	
10		21	22	23	24	25	26	27	6	6	6	
11		28	29	30	31				4	4	4	
12	April					1	2	3	1	1	1	2 <sup>nd</sup> Ugadhi 4 <sup>th</sup> to 9 <sup>th</sup> 1 <sup>st</sup> Mid examination 5 <sup>th</sup> babu jagajevanram jayanthi 10 <sup>th</sup> srirama navami 11 <sup>th</sup> Attendance review 14 <sup>th</sup> Dr. B.R. Ambethkar jayanthi 15 <sup>th</sup> good Friday 28 <sup>th</sup> Attendance review
13		4	5	6	7	8	9	10	5	5	5	
14		11	12	13	14	15	16	17	4	4	4	
15		17	18	19	20	21	22	23	6	6	6	
16		24	25	26	27	28	29	30	6	6	6	
17	May							1	0	0	0	03rd Ramzan 14 <sup>th</sup> Attendance review 22 <sup>nd</sup> One day Workshop on Drafting Using Tekla by V Bhaskara Rao
18		2	3	4	5	6	7	8	5	5	5	
19		9	10	11	12	13	14	15	6	6	6	
20		16	17	18	19	20	21	22	6	6	6	
21		23	24	25	26	27	28	29	6	6	6	

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22		30	31						2	2	2	
21	<b>June</b>			1	2	3	4	5	4	4	4	30-05-2022 to 04-06-2022 2 <sup>nd</sup> Mid examination 6 <sup>th</sup> to 11 <sup>th</sup> Practicals 8 <sup>th</sup> Attendance review 11 <sup>th</sup> Last working day 13 <sup>th</sup> to 25 <sup>th</sup> End semester examinations
23		6	7	8	9	10	11	12	6	6	6	
24		13	14	15	16	17	18	19				
25		20	21	22	23	24	25	26				
26		27	28	29	30							
<b>Total Number of Working Days</b>									95	95	95	
<b>Year</b>	<b>Semester start</b>	<b>Last Working Day</b>		<b>Practical Examinations</b>				<b>Commencement of End Semester Examinations</b>				
II, III & IV Year	14-02-2022	11-06-2022		13-06-2022				13-06-2022				

	Public Holidays		Semester Starting/ Ending days
	Exams & Practical's		Project Work
	Workshops/Guest Lectures/Industrial Visit		Attendance Reviews

Head of the Department

Dean of Academics

Principal

*H. Arunkumar*

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# INDUSTRIAL VISIT



## WATER TREATMENT PLANT – VENDRA

**DNR COLLEGE OF ENGINEERING & TECHNOLOGY  
BHIMAVARAM (AUTONOMOUS)**

**CIVIL DEPARTMENT STUDENTS 1<sup>ST</sup> YEAR B.TECH**

**GUIDANCE BY:**

- **YESU RATHAM**
- **KISHORE**

*H. Subrahmanya*

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**CIVIL DEPARTMENT**

# WATER TREATMENT PLANT

**DATE OF VISIT** : NOVEMBER 8, 2024

**LOCATION** : VENDRA WATER PLANT  
PALAKODERU MANDALAM  
BHIMAVARAM

**ORGANIZED BY** : CIVIL HOD AND FACULTY

**YEAR** : 1<sup>ST</sup> YEAR B.TECH (CIVIL)

## INTRODUCTION:

THE INDUSTRIAL VISIT TO THE WATER TREATMENT PLANT TO A FACILITY THAT IMPROVES THE QUALITY OF WATER TO MAKE IT SAFE FOR USE BY REMOVING IMPURITIES AND CONTAMINANTS. THERE ARE DIFFERENT TYPES OF WATER TREATMENT PLANTS, INCLUDING THOSE THAT TREAT WATER FOR DRINKING, WASTE WATER, AND OTHER USES..... DEPARTMENT SIR'S ARE HELPS TO EXPLAIN THE PROCESS OF WATER TREATMENT PLANT IN SITE VISIT.....

## ➤ WATER TREATMENT PROCESS:

THERE HAVE 5 TYPES OF WATER TREATMENT

- SS TANK
- COAGULATION AND FLOCCULATION
- SEDIMENTATION
- FILTERATION
- DISINFECTION

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## ❖ **SUMMER STORAGE TANK(SS TANK)**



### ❖ **CONSTRUCTION:**

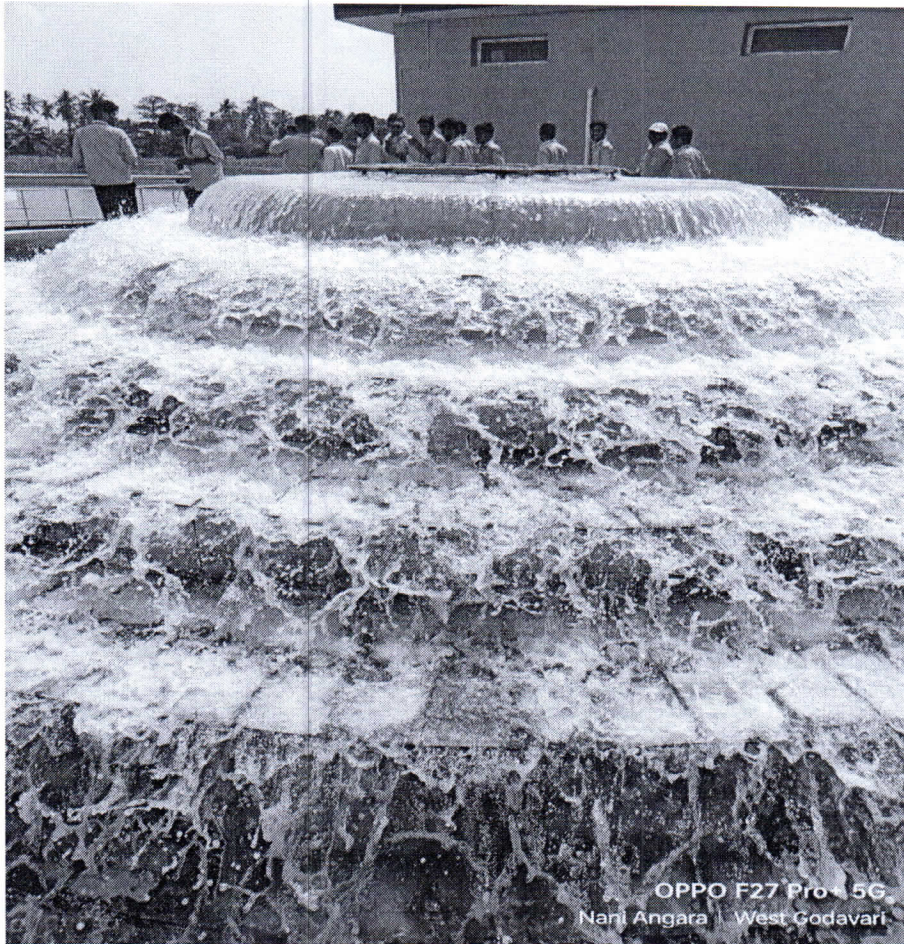
SUMMER STORAGE TANKS ARE MADE OF HOMOGENEOUS EARTH BUND, WITH CONCRETE WALL BUILT AROUND THE UPSTREAM SIDE TO PREVENT SEEPAGE. A 0.6M DEEP CONCRETE WALL IS BUILT ALL AROUND THE TANK FROM THE BED LEVEL TO DOWNWARDS IN THE UPSTREAM SIDE, TO AVOID SEEPAGE BENEATH THE BUND SECTION

### ❖ **HOW THEY ARE FILLED:**

SUMMER STORAGE TANKS CAN BE FILLED BY THE NATURAL FLOW OF A RIVER (OR) BY PUMPING WATER IN TO THE TANK.

VENDRA SUMMER STORAGE TANK DEPTH IS 6.5 AND THE WATER IS COLLECTED FROM GODAVATI AND NEAR BY RIVERS. THE WATER THAT STORED IN SS TANK PASSES THROUGH WATER HOUSE. THAT WORKS 30 HORSE POWER. BECAUSE OF THE POPULATION THE HORSE POWER DEPEND ON THE POPULATION OF THE TOWN (OR) VILLAGE. THE WATER HOUSE WATER PASSES THROUGH AERATOR...

## ❖ AERATOR



### ❖ HOW AERATOR WORKS:

BY OXYGENATING THE WATER AND REMOVING UNDESIRABLE GASES AND METALS, AERATORS PLAY A CRUCIAL ROLE MAKING WATER CLEANER...

AFTER THE AERATOR THE WATER FLOWS TOWARDS COAGULATION BY ADDING CHEMICAL...



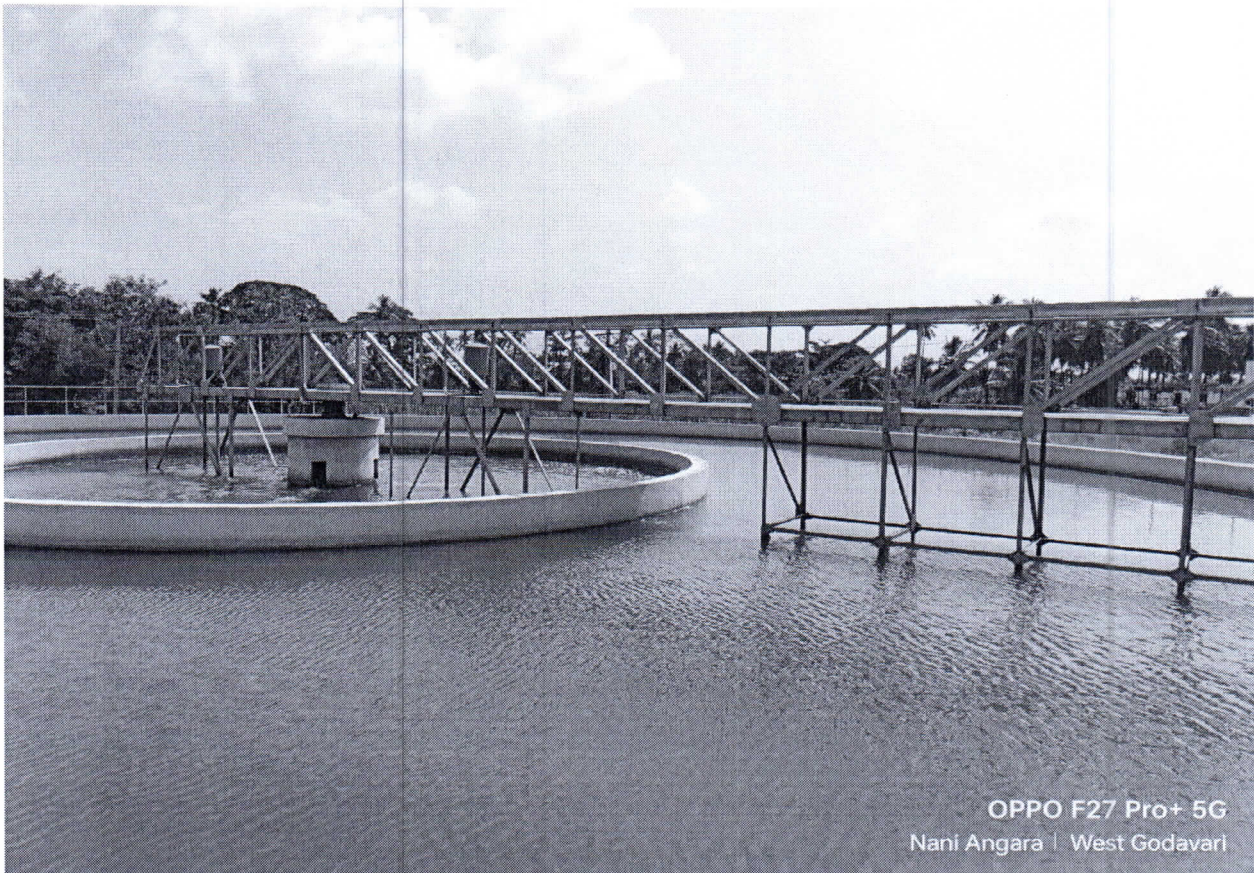
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❖ **COAGULATION AND FLOCCULATION:**

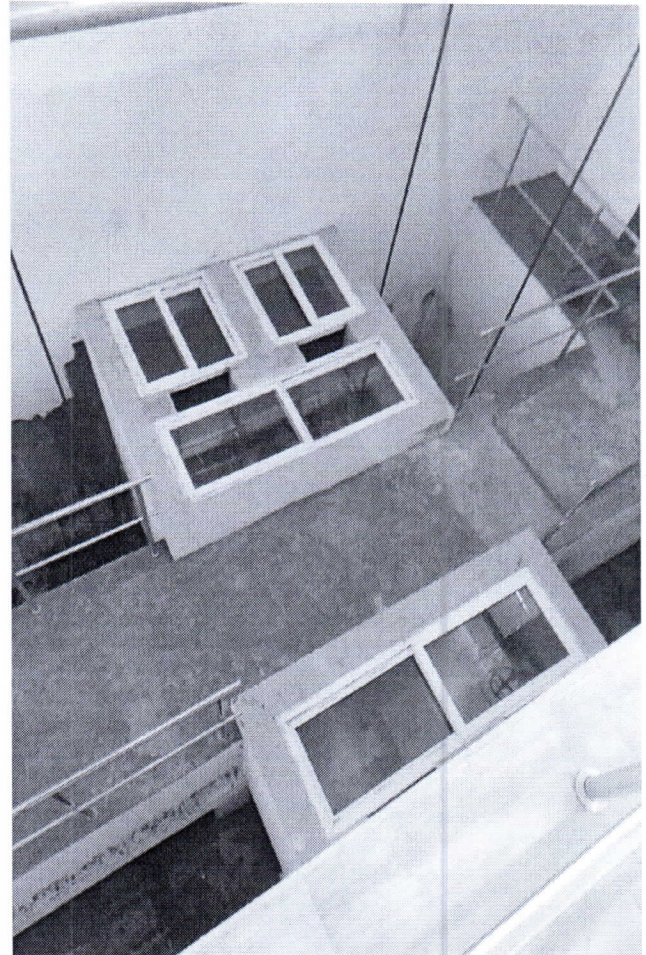
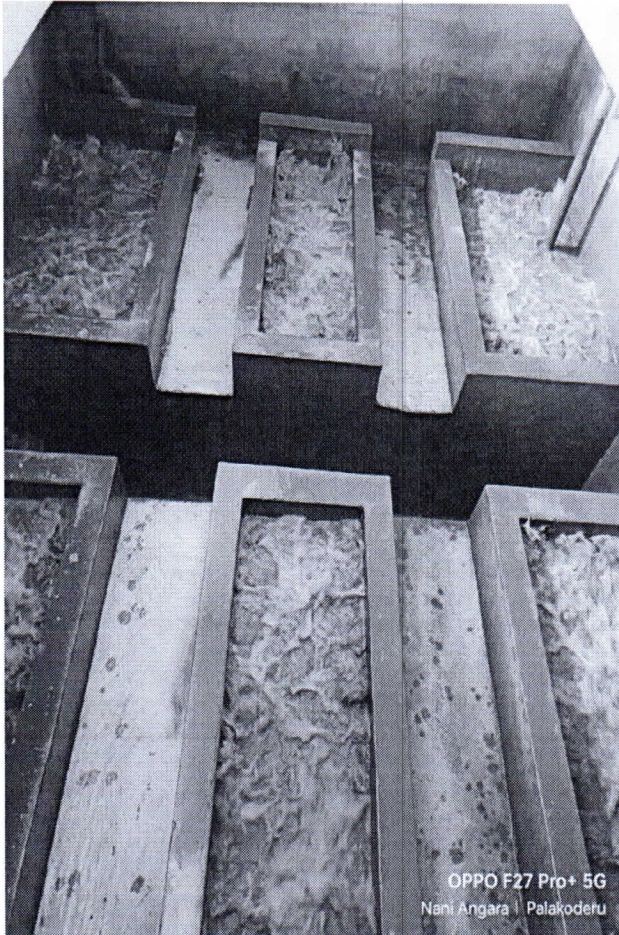
BY ADDING CHEMICALS TO THE WATER TO BIND PARTICALS TOGETHER INTO LARGE PARTICLES (OR) "FLOCS" MAKING IT EASIER TO REMOVE IMPURITIES.....

❖ **SEDIMENTATION**



SEDIMENTATION IS A WATER TREATMENT PROCESS THAT USES GRAVITY TO REMOVE SUSPENDED PARTICALS FROM WATER. IN THIS PROCESS, HEAVIER PARTICALS LIKE SAND AND GARVEL SETTLE OUT FIRST,FOLLOWED BY LIGHTER PARTICALS LIKE CLAY. THE PARTICLES THAT SETTLE OUT ARE CALLED SLUDGE... SEDIMENTATION CAN REDUCE THE AMOUNT OF COAGULATION CHEMICALS NEEDED...

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❖ **FILTRATION:**

CLEAR WATER WAS THEN PASSED THROUGH LAYERS OF SAND, GRAVEL AND CHARCOAL, REMOVING REMAINING PARTICLES AND CERTAIN MICRO-ORGANISMS. AS WATER FLOWS THROUGH THE MEDIA, PARTICLES ARE PHYSICALLY TRAPPED BETWEEN THE GRAINS (OR) WITHIN THE PORES OF THE MATERIALS. FOR INSTANCE, LARGER PARTICLES ARE TRAPPED AT THE SURFACE. WHILE SMALLER ONES GET CAUGHT DEEPER IN THE FILTER AND WIDTH OF FILTRATION IS 1.2 m .....

❖ **BACK WASHING:**

TO KEEP FILTERS FUNCTIONING EFFECTIVELY, BACK WASHING REVERSING THE WATER FLOW IS PERIODICALLY DONE TO CLEAR TRAPPED PARTICLES AND REFRESH THE FILTER MEDIA....

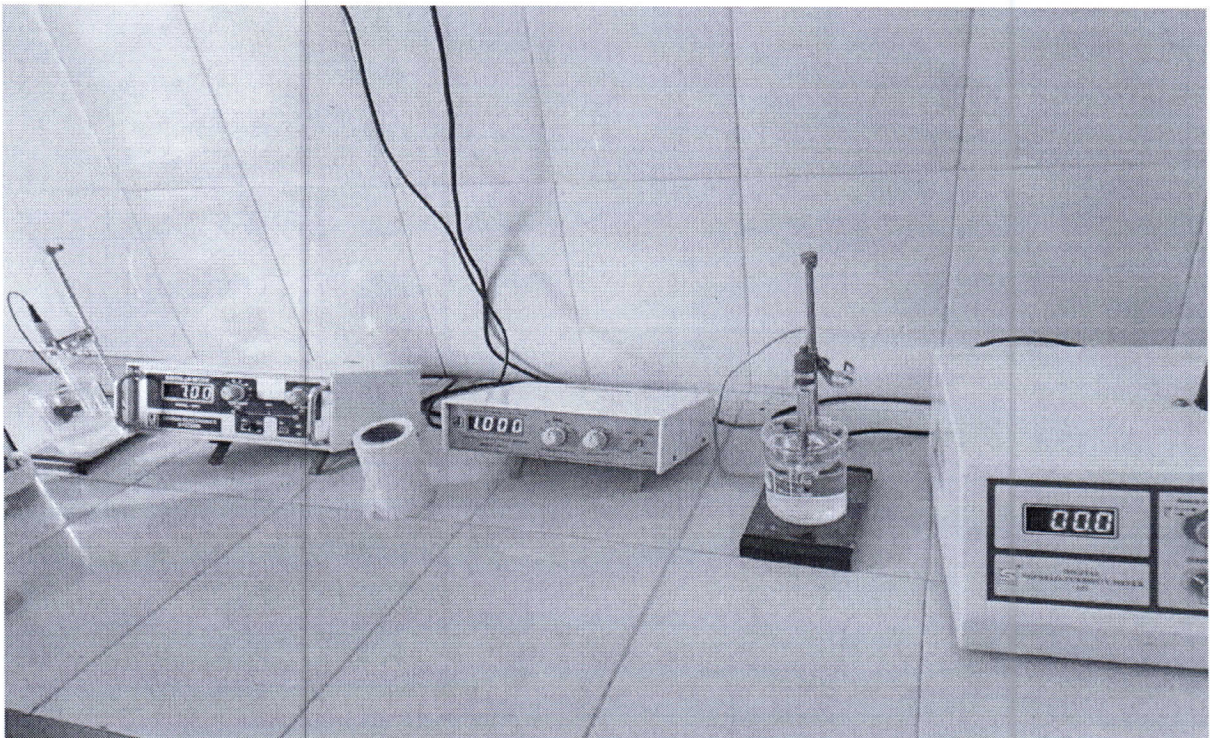
❖ **DISINFECTION:**

TO ELIMINATE HARMFULL BACTERIA AND VIRUSES CHLORINE DISINFECTANTS WERE ADDED TO THE WATER , ENSURING WAS SAFE FOR HUMAN CONSUMPTION....

FOR 2,00000 OF WATER 2,000 LITERS CHLORINE IS ADDED...

❖ **PH ADJUSTMENT:**

FINALLY THE WATER PH VALUE IS CHECKED AND ADJUSTED IF NECESSARY, BEFORE READY TO DISTRIBUTION...



❖ **CONCLUSION:**

THE VISIT TO THE WATER TREATMENT PLANT WAS AN ENLIGHTENING EXPERIENCE, PROVIDING A COMPREHESIVE VIEW OF THE COMPLEX PROCESS INVOLVED IN ENSURING SAFE DRINKING WATER AND OFFERED VALUABLE PRACTIAL KNOWLEDGE COMPLEMENTING OUR CLASSROOM LEARING

**THE END**

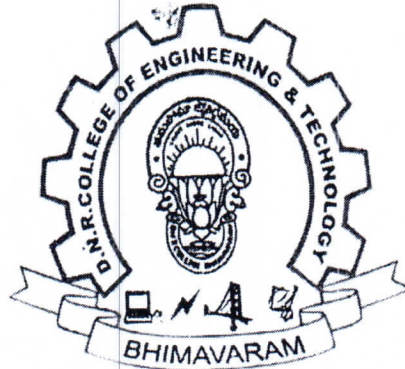
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Balusumudi, Bhimavaram - 534 202



B.Tech / M. Tech / MBA

### STUDENT ATTENDANCE REGISTER

Batch : ..... 2022-26 ..... Regulation : ..... R20 .....

#### Time Table

DAY	MON	TUE	WED	THU	FRI	SAT
PERIOD	5	4	1		3	2
TIMING						

#### Faculty Details :

NAME OF THE FACULTY : M. Pandu Ranga Rao  
DEPARTMENT : Mechanical Engineering  
DESIGNATION : Asst. prof.

#### Subject Details :

YEAR & SEM : III B.Tech, I Sem SEM A.Y. 2024-25  
BRANCH : Mechanical Engineering  
NAME OF THE SUBJECT : Thermal Engineering - 2

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# ACADEMIC CALENDER

Description	From	To	Weeks
Commencement of Class Work	8-7-2024	9-11-2024	18W
Mid Exam -I	2-9-24	6-9-24	1W
Mid Exam -II	4-11-24	9-11-24	1W
Practical Examinations	11-11-24	16-11-24	1W
Theory Exams	18-11-24	30-11-24	2W

Fill the below columns after completion of the Mid Examination

Description	Mid Exam-I	Mid Exam-II
Date of Examination	9/9/24	
Evaluation Completed on	10-9-24	
Sign of HOD	<u>JHE</u>	

**Note :**

- The Principal shall make efforts to make good the lowest working days, if any by conducting extra-classes so as to adhere to the minimum working day's norm :  
90days/semester.
- If the student is Absent for the class, Mark as 'A' with red ink
- This Register is for attendance and Assessment record of class work to be maintained by each staff member handling classes
- Incase of continuous absence for 3 or more periods, the concerned student should bring their parents and submit a letter to the HOD
- The faculty has to enter the Mid and Assignment Marks in the respective columns

### CLASS TIME TABLE

Timings	9-20 to 10-10	10-10 to 11-00	Break		11-10 to 12	12 to 12-50	Lunch		1-50 to 2-40	2-40 to 3-30	3-30 to 4-30
Period	1	2			3	4			5	6	7
Mon	RES	DM-I			Adv. mat	MTE&M			TE-II	Gen	PE&V
Tue	DM-I	RES			Adv. mat	TE-II			← ACS lab →		
Wed	TE-II	COM			RES	Adv. mat			DM-I	MTE&M	GLA
Thu	MTE&M	RES			PE&V	LIB			← TE lab →		
Fri	Adv. mat	MTE&M			TE-II	DM-I			← MT lab →		
Sat	RES	TE-II			Adv. mat	DM-I			MTE&M	INT	SPK

YRP  
Faculty

JHE  
HOD

IQAC

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**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**

KAKINADA-533003, Andhra Pradesh, India

**DEPARTMENT OF MECHANICAL ENGINEERING**

III Year-I Semester		L	T	P	C
		3	0	0	3

**THERMAL ENGINEERING – II**

(Use of steam tables and Mollier chart is allowed)

**Course objectives:**

- 1) To understand the basic concepts of thermal engineering and boilers.
- 2) To gain knowledge about the concepts of steam nozzles and steam turbines.
- 3) To gain knowledge about the concepts of reaction turbine and steam condensers.
- 4) To understand the concepts of reciprocating and rotary type of compressors.
- 5) To acquire knowledge about the centrifugal and axial flow compressors.

**UNIT- I:**

**BASIC CONCEPTS:** Rankine cycle - schematic layout, thermodynamic analysis, concept of mean temperature of heat addition, methods to improve cycle performance – regeneration & reheating. combustion: fuels and combustion, concepts of heat of reaction, adiabatic flame temperature, Stoichiometry, flue gas analysis.

**BOILERS :** Classification – working principles of L.P & H.P boilers with sketches – mountings and accessories – working principles, boiler horse power, equivalent evaporation, efficiency and heat balance – Draught: classification – height of chimney for given draught and discharge, condition for maximum discharge, efficiency of chimney – artificial draught, induced and forced.

**UNIT- II:**

**STEAM NOZZLES:** Function of a nozzle – applications - types, flow through nozzles, thermodynamic analysis – assumptions -velocity of fluid at nozzle exit-Ideal and actual expansion in a nozzle, velocity coefficient, condition for maximum discharge, critical pressure ratio, criteria to decide nozzle shape: Super saturated flow - its effects, degree of super saturation and degree of under cooling, Wilson line.

**STEAM TURBINES:** Classification – impulse turbine; mechanical details – velocity diagram – effect of friction – power developed, axial thrust, blade or diagram efficiency – condition for maximum efficiency. De-laval turbine - methods to reduce rotor speed-velocity compounding, pressure compounding and velocity & pressure compounding, velocity and pressure variation along the flow – combined velocity diagram for a velocity compounded impulse turbine, condition for maximum efficiency.

**UNIT- III:**

**REACTION TURBINE:** Mechanical details – principle of operation, thermodynamic analysis of a stage, degree of reaction –velocity diagram – Parson's reaction turbine – condition for maximum efficiency – calculation of blade height.

**STEAM CONDENSERS:** Requirements of steam condensing plant – classification of condensers – working principle of different types – vacuum efficiency and condenser efficiency – air leakage, sources and its affects, air pump, cooling water requirement.

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**DEPARTMENT OF MECHANICAL ENGINEERING**

**UNIT- IV:**

**COMPRESSORS:** Classification – fan, blower and compressor – positive displacement and non-positive displacement type – reciprocating and rotary types.

**RECIPROCATING:** Principle of operation, work required, Isothermal efficiency, volumetric efficiency and effect of clearance, multi stage compression, saving of work, minimum work condition for two stage compression.

**ROTARY:** Roots Blower, vane sealed compressor, Lysholm compressor –mechanical details and principle of working – efficiency considerations.

**UNIT- V:**

**CENTRIFUGAL COMPRESSORS:** Mechanical details and principle of operation –velocity and pressure variation. Energy transfer-impeller blade shape-losses, slip factor, power input factor, pressure coefficient and adiabatic coefficient– velocity diagrams – power.

**AXIAL FLOW COMPRESSORS:** Mechanical details and principle of operation – velocity triangles and energy transfer per stage degree of reaction, work done factor – isentropic efficiency- pressure rise calculations – Poly tropic efficiency.

**TEXT BOOKS:**

- 1) Thermodynamics and Heat Engines/R.Yadav, Volume -II /Central Publishing House
- 2) Heat Engineering /V.P Vasandani and D.S Kumar/Metropolitan Book Company, New Delhi.

**REFERENCES:**

- 1) Thermal Engineering-M.L.Mathur & Mehta/Jain bros. Publishers
- 2) Thermal Engineering-P.L.Ballaney/ Khanna publishers.
- 3) Thermal Engineering / RK Rajput/ Lakshmi Publications
- 4) Thermal Engineering-R.S Khurmi, &J S Gupta/S.Chand.

**Course Outcomes: At the end of the course, student will be able to**

CO1: Explain the basic concepts of thermal engineering and boilers.

CO2: Discuss the concepts of steam nozzles and steam turbines.

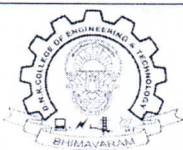
CO3: Gain knowledge about the concepts of reaction turbine and steam condensers.

CO4: Discuss the concepts of reciprocating and rotary type of compressors.

CO5: Acquire knowledge about the centrifugal and axial flow compressors.

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## D.N.R.COLLEGE OF ENGINEERING & TECHNOLOGY

Balusumudi Bhimavaram – 2

Department of Mechanical Engineering

### LESSON PLAN

Program Name:	B.Tech- Mechanical Engineering	A:Y	2024-2025
Course Name:	Thermal Engineering-2	Class / Sem	III / I
Faculty Name:	M.Pandu Ranga Rao	Regulation	R20

Lec. no.	Name of the Topic	TM	Ref
	<b>UNIT-I</b>		
1	BASIC CONCEPTS: Rankine cycle - schematic layout, thermodynamic analysis	C&T	T1
2	concept of mean temperature of heat addition	C&T	T1,T3
3	methods to improve cycle performance – regeneration.	C&T	T1
4	methods to improve cycle performance – reheating	C&T	T1,T3
5	combustion: fuels and combustion	C&T	T1,T3
6	concepts of heat of reaction ,adiabatic flame temperature	C&T	T1
7	Stoichiometry ,flue gas analysis.	C&T	T1
8	BOILERS : Classification	ASST	T1
9	working principles of L.P boilers with sketches	PPT	T1
10	working principles of H.P boilers with sketches	C&T	T2
11	Mountings and accessories	PPT	T1,T2
12	boiler horse power, equivalent evaporation, efficiency	C&T	T1,T2

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13	problems	C&T	T1
14	heat balance	C&T	T2
15	problems	C&T	T1,T2
16	draught, classification	C&T	T1
17	height of chimney for given draught and discharge	C&T	T1
18	problems	C&T	T1
19	condition for maximum discharge, Efficiency of the chimney	C&T	T1
20	artificial draught, induced and forced.	C&T	T1,T3
	UNIT-II	C&T	T1,T2
21	STEAM NOZZLES: Function of a nozzle – applications - types	ASST	T1
22	flow through nozzles, thermodynamic analysis – assumptions	C&T	T1
23	velocity of fluid at nozzle exit-Ideal and actual expansion in a nozzle	C&T	T2
24	velocity coefficient, condition for maximum discharge	C&T	T1
25	Problems	C&T	T2
26	critical pressure ratio,problems	C&T	T1,T3
27	criteria to decide nozzle shape: Super saturated flow ,its effects	C&T	T1,T3
28	degree of super saturation and degree of under cooling - Wilson line.	C&T	T1,T2
29	problems	C&T	T1
30	STEAM TURBINES: Classification – impulse turbine; mechanical details – velocity diagram – effect of friction – power developed, axial thrust, blade or diagram efficiency	PPT	T1
31	problems	C&T	T1
32	condition for maximum efficiency, De-laval turbine	C&T	T1
33	methods to reduce rotor speed-velocity compounding, pressure compounding and velocity & pressure compounding velocity and pressure variation along the flow	PPT	T1

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34	combined velocity diagram for a velocity compounded impulse turbine, condition for maximum efficiency	C&T	T2
35	PROBLEMS	C&T	T2
36	PROBLEMS	C&T	T2
37	PROBLEMS	C&T	T2
	<b>UNIT-III</b>	C&T	T1
38	REACTION TURBINE: Mechanical details – principle of operation, thermodynamic analysis of a stage	PPT	T1
39	degree of reaction –velocity diagram	C&T	T1
40	Parson's reaction turbine – condition for maximum efficiency	ASST	T1
41	calculation of blade height, problems	C&T	T1, T2
42	STEAM CONDENSERS: Requirements of steam condensing plant – classification of condensers	PPT	T1
43	working principle of different types – vacuum efficiency and condenser efficiency	C&T	T1
44	air leakage, sources and its affects, air pump- cooling water requirement.	C&T	T2
45	PROBLEMS	C&T	T1
46	PROBLEMS	C&T	T1
47	PROBLEMS	C&T	T1
	UNIT-1V		
48	COMPRESSORS: Classification – fan, blower and compressor	PPT	T2
49	positive displacement and non-positive displacement type – reciprocating and rotary types.	C&T	T2
50	RECIPROCATING: Principle of operation, work required, Isothermal efficiency, volumetric efficiency and effect of clearance	C&T	T3
51	multi stage compression, saving of work, minimum work condition for two stage compression.	PPT	T3

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52	ROTARY: Roots Blower, vane sealed compressor, Lysholm compressor –mechanical details and principle of working – efficiency considerations	C&T	T2
53	PROBLEMS	C&T	T2
54	PROBLEMS	C&T	T2
55	PROBLEMS	C&T	T2
	UNIT-5		
56	CENTRIFUGAL COMPRESSORS: Mechanical details and principle of operation –velocity and pressure variation. Energy transfer-impeller blade shape-losses	ASST	T3
57	slip factor, power input factor, pressure coefficient and adiabatic coefficient– velocity diagrams – power.	C&T	T3
58	slip factor, power input factor, pressure coefficient and adiabatic coefficient– velocity diagrams – power.	C&T	T3
59	degree of reaction, work done factor	PPT	T3
60	isentropic efficiency- pressure rise calculations – Poly tropic efficiency.	C&T	T3
61	PROBLEMS	C&T	T3
62	PROBLEMS	C&T	T3
63	PROBLEMS	C&T	T3
64	PROBLEMS	C&T	T3

## Teaching Methods: C&T:-Chalk & Talk; S/P:-Slides/PPT;Videos; SEM: Seminar; DEMO; CHART; ET/GL: Expert Talk/Guest Lecture; QUIZ; GD:-Group discussion; RTCS: Real time case studies; JAR:-Journal article review; PD:-Poster design; OL:-Online lecture/Google class room; Industrial Visit (IV), Assignment (ASG), Quiz/Puzzle (Q), Brain storming (BS), Think-Pair-Share (TPS) etc.

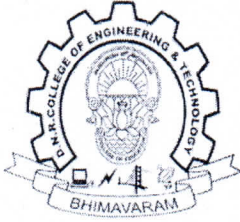
#### TEXT BOOKS:

T1. I.C ENGINES, V.GANESAN –TATA MCGRAW HILL PUBLISHERS

T2. THERMAL ENGINEERING-R.S KHURMI AND J.K.GUPTA,S,CHAND PUBLICATIONS

T3 THERMAL ENGINEERING –R.K RAJPUT, S,CHAND PUBLICATIONS

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## D.N.R.COLLEGE OF ENGINEERING & TECHNOLOGY

Balusumudi Bhimavaram – 2

Department of Mechanical Engineering

### TUTORIAL PLAN

Program Name:	B.Tech- Mechanical Engineering	A:Y	2024-2025
Course Name:	Thermal Engineering	Class / Sem	III/ I
Faculty Name:	M.Pandu Ranga Rao	Regulation	R20

TUT. no.	Name of the Topic	TM	Ref
1	Problems on simple Rankine cycle	C&T	T1,T3
2	Problems on Reheat Rankine cycle	C&T	T1,T2
3	Problems on Regenerative Rankine cycle	C&T	T1
4	Problems on Boiler performance	C&T	T1
5	Problems on Boiler draught	C&T	T1,T3
6	Problems in steam nozzles	C&T	T3
7	Problems on Delaval steam turbine	C&T	T1,T3
8	Problems in Parsons Reaction Steam Turbines	C&T	T1,T2

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9	Problems in Reciprocating Air compressors	C&T	T2
10	Problems in Centrifugal Air compressors	C&T	T1
11	Problems in Axial Air compressors	C&T	T1,T3

**## Teaching Methods:** C&T:-Chalk & Talk; S/P:-Slides/PPT;Videos; SEM: Seminar; DEMO; CHART; ET/GL: Expert Talk/Guest Lecture; QUIZ; GD:-Group discussion; RTCS: Real time case studies; JAR:-Journal article review; PD:-Poster design; OL:-Online lecture/Google class room; Industrial Visit (IV), Assignment (ASG), Quiz/Puzzle (Q), Brain storming (BS), Think-Pair-Share (TPS) etc.

**TEXTBOOKS:**

T1. I.C

ENGINES, V.GANESAN –TATA MCGRAW HILL PUBLISHERS

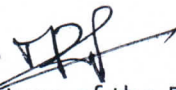
T2. THERMAL ENGINEERING-R.S KHURMI AND J.K.GUPTA,S,CHAND PUBLICATIONS


T3 THERMAL ENGINEERING –R.K RAJPUT, S,CHAND PUBLICATIONS

**REFERENCES:**

R1. HEAT ENGINES-

VASANDANI &KUMAR –THERMAL PUBLICATIONS

  
Signature of the Faculty


  
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# Teaching Dairy

Unit No/ Topic No	Date	Period	Topic Covered	Sign
<u>Unit-1</u>	9/7	4	Basic concepts, Simple Rankine cycle	SP
	10/7	1	concept of mean temp heat addition	SP
	12/7	2	Problems on simple Rankine cycle	SP
	13/7	3	problems.	SP
	15/7	5	methods to improve cycle performance	SP
	16/7	4	problems	SP
	17/7	2	Problems.	SP
	18/7	2	Fuels & combustion	SP
	19/7	3	concepts of heat of reaction	SP
	20/7	2	adiabatic flame temperature	SP
	22/7	5	Flue gas analysis, problems	SP
	24/7	1	Boilers classification.	SP
	26/7	3	working of colchram boiler	SP
	27/7	2	working of Babcock & wilcox boiler	SP
	29/7	5	working of H.P boilers.	SP
	30/7	3	Boiler mountings	SP
	31/7	1	Boiler Accessories.	SP
	2/8	3	Boiler performance	SP
	5/8	5	heat balance sheet, draught	SP
	6/8	4	condition for max discharge	SP
<u>Unit 2</u>	7/8	1	nozzles, types	SP
	9/8	4	Thermodynamic analysis of nozzles.	SP
	10/8	2	problems on nozzle exit velocity.	SP
	12/8	5	condition for max discharge.	SP
	13/8	3	critical pressure ratio	SP
	14/8	2,6	problems	SP
	17/8	2	problems	SP
	19/8	5	super saturated flow, problems.	SP
	20/8	4	steam turbines, classification	SP

# Teaching Dairy

Unit No/ Topic No	Date	Period	Topic Covered	Sign
	23/8	3	Delayed turbine, power developed, $\eta$ .	of
	24/8	2	Problems	of
	27/8	4	Condition for max $\eta$ problems.	of
	28/8	1	compounding methods.	of
	30/8	3	<del>cond</del> problems.	of
unit 3	31/8	2	Reaction turbines, classification	of
<del>unit 3</del>	3/9	4	Degree of reaction	of
	4/9	1	velocity triangle's diagrams, problems	of
	6/9	3	Parson's Reaction turbine, Power developed	of
	14/9	2	Problems.	of
	17/9	4	condition for max $\eta$ , calculation of blade height	of
	18/9	1	problems.	of
	19/9	1	Requirements of steam condensing plant	of
	20/9	3	classification of steam condensers	of
	21/9	2	working principles of <sup>FT</sup> condensers.	of
	23/9	3	working of surface condensers	of
	25/9	1	vacuum $\eta$ , condenser $\eta$ .	of
	27/9	3	air leakage, its sources & effects, air pump	of
	30/9	5	problems.	of
			<u>I.H.E.</u>	

  
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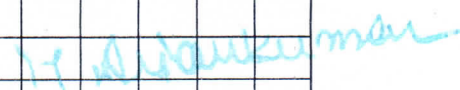
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Period	1	3	2	5	3	1	3	5	4	1	4	2	5	3	2	6	2	5	4	3
1	5	6	7	A	8	9	10	11	12	A	13	14	A	A	A	A	15	16	17	18
LE1	A	8	9	10	11	12	13	14	A	A	A	A	A	15	16	17	A	18	19	20
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Cl.No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Date	21/8	21/8	28/8	30/8	31/8	03/9	04/9	06/9	14/9	17/9	18/9	19/9	20/9	21/9	23/9	25/9	27/9	29/9		
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