



Remedial Classes 2021-22

DEPARTMENT OF MECHANICAL ENGINEERING

GOKARAJU RANGARAJU
INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Autonomous)



GRIET

Remedial School

To support the weak students, RS has conducted remedial classes in four phases in the a.y 2021-22. This includes 2 phases of I – year subjects and 2 phases of core subjects. In this document, phase2 and phase 3 details are given.



Remedial Classes 2021-22

PHASE-II

Table of Contents

| S.No | Details |
|-------------|---------------------------|
| 1 | Circular |
| 2 | Schedule of Classes |
| 3 | Student Roll List |
| 4 | Student Attendance Sheets |
| 5 | Faculty Report |
| 6 | Student Feedback |
| 7 | Photographs |
| 8 | Transition Rate Report |



GRIET/PRIN/12A/G/21-22

05 Nov 2021

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING & TECHNOLOGY

REMEDIAL CLASSES 2021-22

CIRCULAR

FINISHING SCHOOL

This is to inform you all that Remedial Classes will be held for academically weak students from 15th November 2021.

List of students and time tables are send to individual departments.

Dean Finishing School

-

5TH Nov 2021

From
Dean,
Finishing school
GRIET.

To
The HOD
MECH
GRIET

Request for faculty and Class rooms to conduct Remedial classes.

Sir/Madam,

This is to inform you that Finishing school of GRIET is conducting Remedial classes for B.Tech II year students to prevent failure of Sem-I tough subjects.

To conduct the classes we request you

- 1) Permit us to use 2 online classes from 3PM -4PM from 11th Nov 2021 to 18th Nov 2021
- 2) Nominate faculty to teach the following courses:

| S.No | YEAR | Course title | No. of Students | Name of the faculty |
|------|------|-------------------------------|-----------------|---------------------|
| 1 | II-I | Thermodynamics (GR20A2041) | 24 | Mr. B Ch Nookaraju |



Thanking you
Yours Sincerely,
(Dr V N Ramadevi)



Gokaraju Rangaraju Institute of Engineering and Technology
Mechanical Engineering
Remedial Classes -List of Students

Thermodynamics

| Sl.No | Roll.No | Subject Code | Subject Name |
|-------|------------|--------------|----------------|
| 1 | 21245A0301 | GR20A2041 | Thermodynamics |
| 2 | 20241A0325 | GR20A2041 | Thermodynamics |
| 3 | 20241A0328 | GR20A2041 | Thermodynamics |
| 4 | 20241A0327 | GR20A2041 | Thermodynamics |
| 5 | 20241A0337 | GR20A2041 | Thermodynamics |
| 6 | 20241A0318 | GR20A2041 | Thermodynamics |
| 7 | 20241A0323 | GR20A2041 | Thermodynamics |
| 8 | 20241A0330 | GR20A2041 | Thermodynamics |
| 9 | 20241A0305 | GR20A2041 | Thermodynamics |
| 10 | 20241A0348 | GR20A2041 | Thermodynamics |
| 11 | 21245A0305 | GR20A2041 | Thermodynamics |
| 12 | 20241A0336 | GR20A2041 | Thermodynamics |
| 13 | 20241A0308 | GR20A2041 | Thermodynamics |
| 14 | 20241A0313 | GR20A2041 | Thermodynamics |
| 15 | 21245A0302 | GR20A2041 | Thermodynamics |
| 16 | 20241A0331 | GR20A2041 | Thermodynamics |
| 17 | 20241A0353 | GR20A2041 | Thermodynamics |
| 18 | 20241A0345 | GR20A2041 | Thermodynamics |
| 19 | 20241A0342 | GR20A2041 | Thermodynamics |
| 20 | 21245A0307 | GR20A2041 | Thermodynamics |
| 21 | 20241A0310 | GR20A2041 | Thermodynamics |
| 22 | 20241A0339 | GR20A2041 | Thermodynamics |
| 23 | 20241A0316 | GR20A2041 | Thermodynamics |
| 24 | 20241A0303 | GR20A2041 | Thermodynamics |

Syllabus

Subject: Thermodynamics (II-I)

UNIT I

Fundamentals: System & Control volume, Property, State & Process, Exact & Inexact differentials, Thermodynamic definition of work, examples, Displacement work, Path dependence of displacement work and illustrations for simple processes, electrical, magnetic, gravitational, spring and shaft work.

Temperature, Definition of thermal equilibrium and Zeroth law, Temperature scales, Various Thermometers- Definition of heat, examples of heat/work interaction in systems- First Law for Cyclic & Non-cyclic processes, Concept of total energy E, Demonstration that E is a property, Various modes of energy, Internal energy and Enthalpy.

UNIT II

First Law for Flow Processes-Derivation of general energy equation for a control volume; Steady state steady flow processes including throttling; Examples of steady flow devices; Unsteady processes; examples of steady and unsteady I law applications for system and control volume.

Second law-Definitions of direct and reverse heat engines; Definitions of thermal efficiency and COP; Kelvin-Planck and Clausius statements; Definition of reversible process; Internal and external irreversibility; Carnot cycle; Absolute temperature scale.

UNIT III

Clausius inequality, Definition of entropy S, Demonstration that entropy S is a property, Evaluation of S for solids, liquids, ideal gases and ideal gas mixtures undergoing various processes, Determination of s from steam tables-Principle of increase of entropy, Illustration of processes in T-s coordinates, Definition of Isentropic efficiency for compressors, turbines and nozzles-Irreversibility and Availability, Availability function for systems and Control volumes undergoing different processes, Second law analysis for a control volume, Exergy balance equation and Exergy analysis.

UNIT IV

Definition of Pure substance, Ideal Gases and ideal gas mixtures, Real gases and real gas mixtures, Compressibility charts- Properties of two phase systems-Const. temperature and Const. pressure heating of water, Definitions of saturated states, P-v-T surface, Use of steam tables and R134a tables, dryness fraction & measurement, Saturation tables, Superheated tables, Identification of states & determination of properties, Mollier's chart.

UNIT V

Thermodynamic cycles: Basic Rankine cycle, Basic Brayton cycle, Basic vapor compression cycle and comparison with Carnot cycle.

Faculty Report on Subject

(Topics Covered)

Subject: Thermodynamics (II-I)

Unit 1.

- Discussed System & Control volume, Property, State & Process, Exact & Inexact differentials, Thermodynamic
- definition of work, examples, Displacement work,
- Path dependence of displacement work
- and illustrations for simple processes, electrical, magnetic, gravitational, spring and shaft work.

Unit2.

- Explained the First Law for Flow Processes-
- Derivation of general energy equation for a control volume; Steady state steady flow processes including throttling;
- Examples of steady flow devices;
- Unsteady processes; examples of steady and unsteady I law applications for system and control volume.

Unit 3.

- Discussed Clausius inequality,
- Definition of entropy S,
- Demonstration that entropy S is a property,
- Evaluation of S for solids, liquids, ideal gases and ideal gas mixtures undergoing various processes.

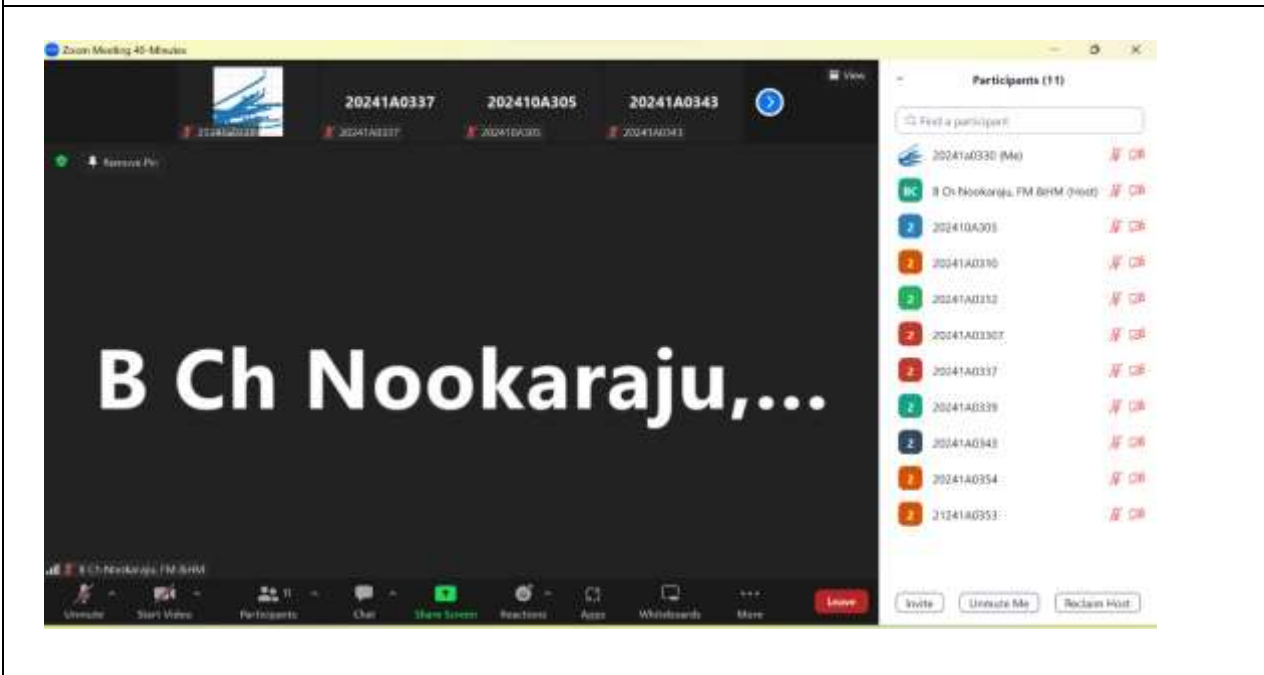
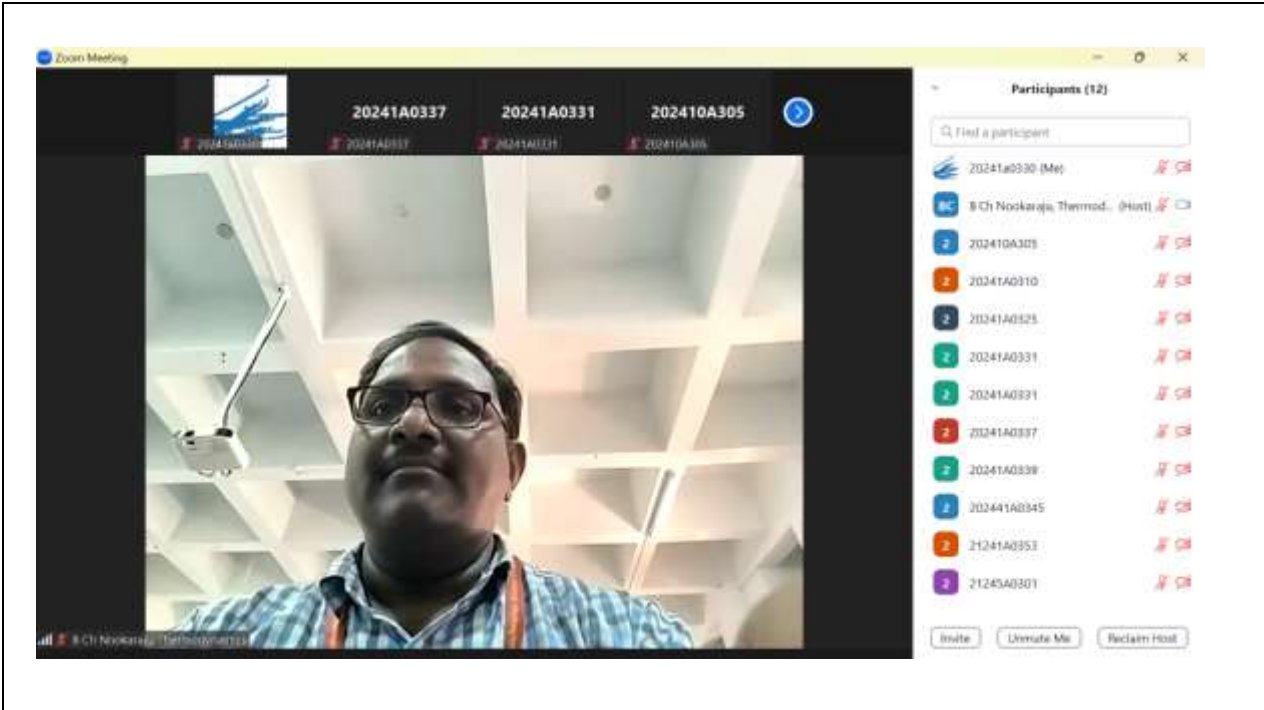
Unit4.

- Explained Definition of Pure substance,
- Ideal Gases and ideal gas mixtures,
- Real gases and real gas mixtures,
- Compressibility charts- Properties of two phase systems-Const. temperature and Const.

Unit5. Discussed

Thermodynamic cycles: Basic Rankine cycle, Basic Brayton cycle, Basic vapor compression cycle and comparison with Carnot cycle.

Images of ONLINE classes taken
Thermodynamics





GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING & TECHNOLOGY
FINISHING SCHOOL

REMEDIAL CLASSES (Academic support for students) Student Feed Back

Branch: MECH
Subject: Thermodynamics

Year: II
Faculty Name: Mr. BCH Nookaraju

Sem: I

| S.No | Item | Feedback |
|------|------------------------------|--|
| 1 | Material presented | ✓ Excellent/Very Good/Good/Average/Below Average |
| 2 | Teaching Clarity | ✓ Excellent/Very Good/Good/Average/Below Average |
| 3 | Covering of important topics | Excellent/✓ Very Good/Good/Average/Below Average |
| 4 | Doubts clarification | Excellent/✓ Very Good/Good/Average/Below Average |

Suggestions:

V N Ramakrishna

Dean Finishing School



Gokaraju Rangaraju Institute of Engineering and Technology
Mechanical Engineering
Remedial Classes -Result analysis

Subject: Thermodynamics AY 2021-22 II Sem-I

| S.NO | Roll.NO | 11-11-2021 | 15-11-2021 | 17-11-2021 | 18-11-2021 | Result |
|-------------|----------------|-------------------|-------------------|-------------------|-------------------|---------------|
| 1 | 21245A0301 | P | P | P | P | Pass |
| 2 | 20241A0325 | P | P | P | P | Pass |
| 3 | 20241A0328 | P | P | P | P | Pass |
| 4 | 20241A0327 | A | A | A | P | Pass |
| 5 | 20241A0337 | P | P | P | P | Pass |
| 6 | 20241A0318 | P | P | A | P | Pass |
| 7 | 20241A0323 | P | P | P | P | Pass |
| 8 | 20241A0330 | A | P | P | P | Pass |
| 9 | 20241A0305 | P | A | P | P | Pass |
| 10 | 20241A0348 | P | P | P | P | Pass |
| 11 | 21245A0305 | P | A | P | P | Pass |
| 12 | 20241A0336 | P | P | P | P | Pass |
| 13 | 20241A0308 | A | P | P | P | Pass |
| 14 | 20241A0313 | P | P | P | P | Pass |
| 15 | 21245A0302 | P | P | P | P | Pass |
| 16 | 20241A0331 | P | P | P | P | Pass |
| 17 | 20241A0353 | P | A | P | P | Pass |
| 18 | 20241A0345 | P | P | P | P | Pass |
| 19 | 20241A0342 | P | P | P | P | Pass |
| 20 | 21245A0307 | A | P | P | P | Pass |
| 21 | 20241A0310 | P | A | P | P | Pass |
| 22 | 20241A0339 | A | P | A | A | FAIL |
| 23 | 20241A0316 | P | A | P | A | FAIL |
| 24 | 20241A0303 | A | A | P | P | FAIL |



Remedial Classes PHASE-III

Table of Contents

| S.No | Details |
|------|---------------------------|
| 1 | Circular |
| 2 | Schedule of Classes |
| 3 | Student Roll List |
| 4 | Student Attendance Sheets |
| 5 | Faculty Report |
| 6 | Student Feedback |
| 7 | Photographs |
| 8 | Transition Rate Report |



GRIET/PRIN/12A/G/21-22

20 Jan 2022

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING & TECHNOLOGY

REMEDIAL CLASSES 2021-22

CIRCULAR

FINISHING SCHOOL

This is to inform you all that Remedial Classes will be held for academically weak students from 27 November 2022. List of students and time tables are send to individual departments.

Dean Finishing School

-

20th Jan 2022

From
Dean,
Finishing school
GRIET.

To
The HOD
MECH
GRIET

Request for faculty and Classrooms to conduct Remedial classes.

Sir/Madam,

This is to inform you that Finishing school of GRIET is conducting Remedial classes for B.Tech II year students to prevent failure of Sem-II tough subjects.

To conduct the classes we request you

- 3) Permit us to use 4 online classes from 3PM -4PM from 27th Jan 2022 to 2nd Feb 2022
- 4) Nominate faculty to teach the following courses:

| S.No | YEAR | Course title | No. of Students | Name of the faculty |
|------|-------|--|-----------------|---------------------|
| 1 | II-II | Thermal Engineering (GR20A2045) | 24 | Dr Karthykeyan |
| 2 | II-II | Fluid Mechanics and Fluid Machines (GR20A2046) | 24 | Mr Nookaraju BCH |



Thanking you
Yours Sincerely,
Dr V N Ramadevi



Gokaraju Rangaraju Institute of Engineering and Technology
Remedial School
A.y:2021-22, Phase III, Remedial Classes Schedule(online)

27th Jan 2022 to 2nd Feb 2022
II B.Tech II Sem

| Sl | Subject | Name of the faculty | Year | Session 1 | Session 2 | Session 3 | Session 4 |
|----|------------------------------------|---------------------|-------|-----------------------------|-----------------------------|----------------------------|----------------------------|
| 1 | Thermal Engineering | Dr Karthykeyan | II-II | 27/1/2022 (3 pm to 4 pm) | 31/1/2022 (3 pm to 4 pm) | 1/2/2022 (3 pm to 4 pm) | 2/2/2022 (3 pm to 4 pm) |
| 2 | Fluid mechanics and Fluid machines | Mr BCH Nookaraju | II-II | 27/1/2022 (3 pm to 4 pm) | 31/1/2022 (3 pm to 4 pm) | 1/2/2022 (3 pm to 4 pm) | 2/2/2022 (3 pm to 4 pm) |

HOD-MECH

Dean, Finishing School

(Faculty Coordinator)



**Gokaraju Rangaraju Institute of Engineering and
Technology Mechanical Engineering
Remedial Classes -List of Students**

**SUBJECT: Thermal Engineering.
AY 2021-22 Sem 2**

| Sl.No | Roll.No | Subject Code | Subject Name |
|--------------|----------------|---------------------|---------------------|
| 1 | 20241A0314 | GR20A2045 | Thermal Engineering |
| 2 | 20241A0305 | GR20A2045 | Thermal Engineering |
| 3 | 21245A0302 | GR20A2045 | Thermal Engineering |
| 4 | 20241A0313 | GR20A2045 | Thermal Engineering |
| 5 | 20241A0318 | GR20A2045 | Thermal Engineering |
| 6 | 20241A0356 | GR20A2045 | Thermal Engineering |
| 7 | 20241A0328 | GR20A2045 | Thermal Engineering |
| 8 | 20241A0345 | GR20A2045 | Thermal Engineering |
| 9 | 20241A0308 | GR20A2045 | Thermal Engineering |
| 10 | 21245A0305 | GR20A2045 | Thermal Engineering |
| 11 | 20241A0331 | GR20A2045 | Thermal Engineering |
| 12 | 20241A0349 | GR20A2045 | Thermal Engineering |
| 13 | 20241A0323 | GR20A2045 | Thermal Engineering |
| 14 | 20241A0353 | GR20A2045 | Thermal Engineering |
| 15 | 20241A0336 | GR20A2045 | Thermal Engineering |
| 16 | 20241A0330 | GR20A2045 | Thermal Engineering |
| 17 | 20241A0319 | GR20A2045 | Thermal Engineering |
| 18 | 20241A0346 | GR20A2045 | Thermal Engineering |
| 19 | 21245A0307 | GR20A2045 | Thermal Engineering |
| 20 | 20241A0306 | GR20A2045 | Thermal Engineering |
| 21 | 20241A0310 | GR20A2045 | Thermal Engineering |
| 22 | 20241A0316 | GR20A2045 | Thermal Engineering |
| 23 | 20241A0334 | GR20A2045 | Thermal Engineering |
| 24 | 20241A0342 | GR20A2045 | Thermal Engineering |

Syllabus

Subject: Thermal Engineering (II-II)

UNIT I

I.C. Engines: Classification - Working principles of Four & Two stroke engine, SI & CI Engines, Valve and Port Timing Diagrams, Air – Standard air-fuel and actual cycles. Comparison of Air Standard and Actual Cycles, Time Loss Factor, Heat Loss Factor, Exhaust Blow down-Loss due to Gas exchange process. Volumetric Efficiency. Loss due to Rubbing Friction, Actual and Fuel-Air Cycles of CI Engines. Engine systems, cooling and lubrication systems, Fuel properties and Combustion Stoichiometry.

UNIT II

Combustion in S.I. Engines: Fuel system components, Carburetor, Fuel Injection System, Ignition systems, Normal Combustion and abnormal combustion, Importance of flame speed and effect of engine variables – Type of Abnormal combustion, pre-ignition and knocking. Fuel requirements and fuel rating, anti- knock additives, combustion chamber requirements, types. Combustion in C.I. Engines: Four stages of combustion, Delay period and its importance, Effect of engine variables, Diesel Knock, need for air movement, suction, compression and combustion induced turbulence, open and divided combustion chambers and nozzles used, fuel requirements and fuel rating.

UNIT III

Testing and Performance: Parameters of performance, measurement of cylinder pressure, fuel consumption, air intake, exhaust gas composition. Significance of Performance test: Determination of Brake power, frictional losses and indicated power, Air fuel ratio, thermal and Mechanical efficiencies Heat balance sheet: Significance, losses due to exhaust gases, cooling systems and various ways, Chart of Heat balance

UNIT IV

Reciprocating and Rotary Compressors: Compressors: Classification-positive displacement and roto dynamic machinery-Power producing and power absorbing machines, fan, blower and compressor-positive displacement and dynamic types-reciprocating and rotary types. Reciprocating: Principle of operation, work required, Isothermal efficiency volumetric efficiency and effect of clearance, stage compression, under cooling, saving of work, minimum work condition for stage compression. Rotary (Positive displacement type): Roots Blower, vane sealed compressor, Lysholm Compressor, mechanical details and principle of working and efficiency considerations.

UNIT – V

Dynamic and Axial Flow Compressors Dynamic Compressors: 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 –Polytropic efficiency.

Faculty Report on Subject

(Topics Covered)

Subject: Thermal Engineering (II-II)

Unit 1.

Discussed I.C. Engines:

- Classification - Working principles of Four & Two stroke engine,
- SI & CI Engines,
- Valve and Port Timing Diagrams, Air

Unit2. Explained Combustion in S.I. Engines:

- Fuel system components, Carburetor,
- Fuel Injection System, Ignition systems,
- Normal Combustion and abnormal combustion,

Unit 3.

- Discussed Testing and Performance:
- Parameters of performance,
- measurement of cylinder pressure, fuel consumption, air intake, exhaust gas composition.

Unit4.

- Explained Reciprocating and Rotary Compressors:
- Compressors: Classification-positive displacement and roto dynamic machinery-Power producing and power absorbing machines,
- fan, blower and compressor-positive displacement and dynamic types-reciprocating and rotary types.

Unit5.

- Discussed dynamic and Axial Flow Compressors Dynamic Compressors:
- 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.



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING & TECHNOLOGY

**FINISHING
SCHOOL**

REMEDIAL CLASSES (Academic support for students) Student Feed Back

Branch: MECH

Year: II Sem: II

Subject: Thermal Engineering

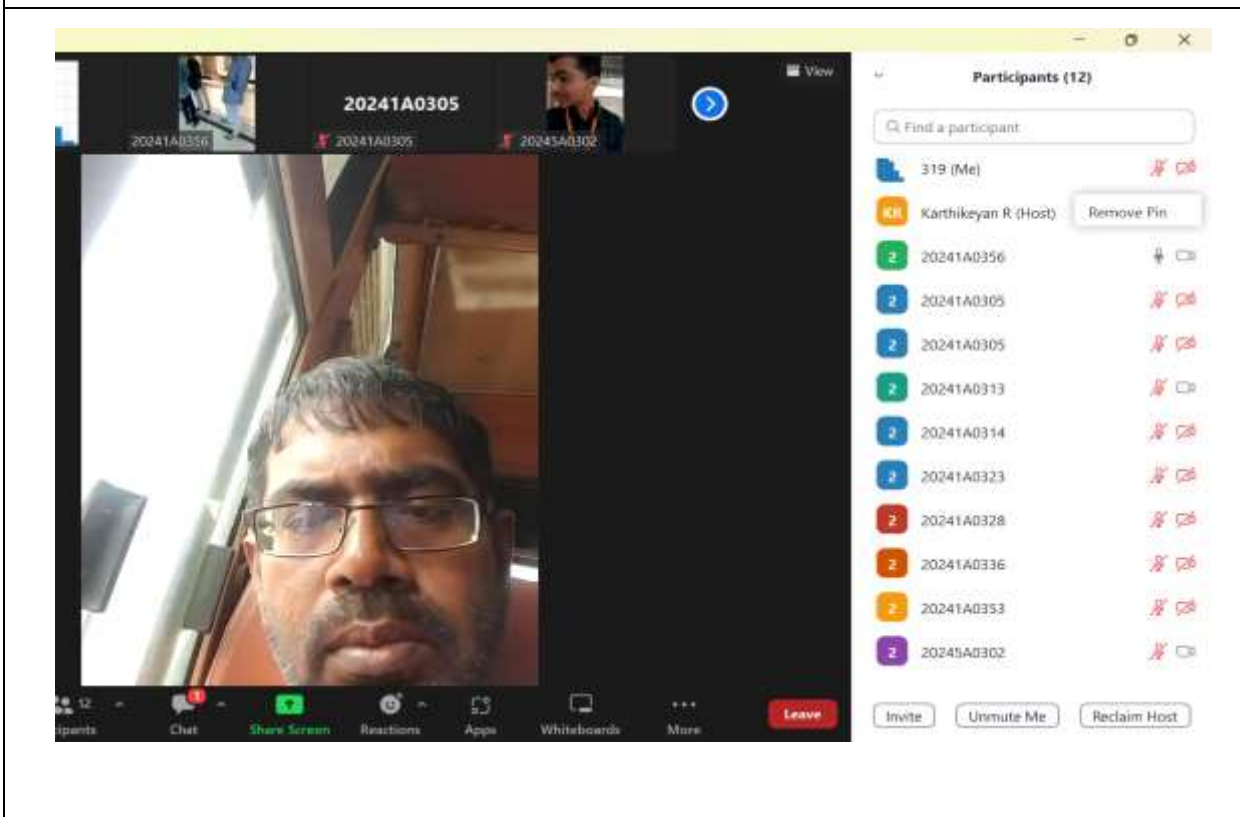
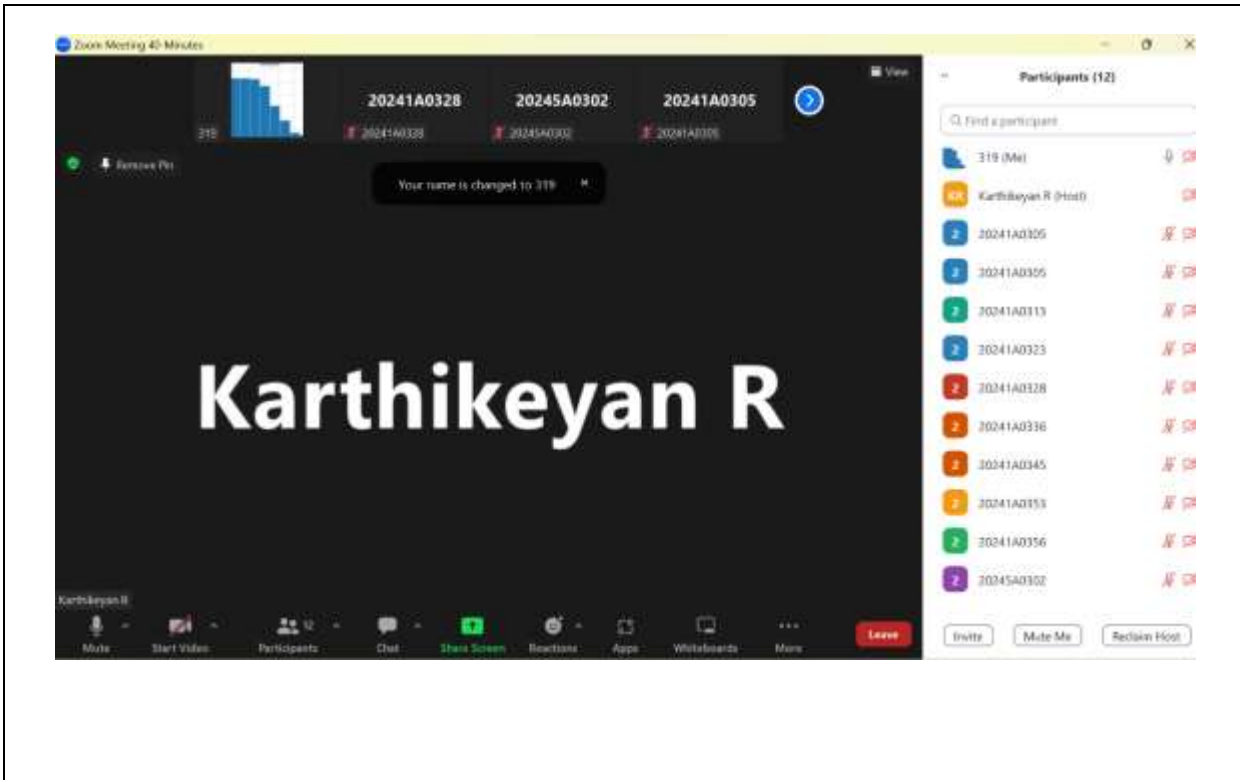
Faculty Name: Dr Karthykeyan R

| S.No | Item | Feedback |
|------|------------------------------|---|
| 1 | Material presented | ✓Excellent/Very Good/Good/Average/Below Average |
| 2 | Teaching Clarity | ✓Excellent/Very Good/Good/Average/Below Average |
| 3 | Covering of important topics | Excellent/✓Very Good/Good/Average/Below Average |
| 4 | Doubts clarification | Excellent/✓Very Good/Good/Average/Below Average |

Suggestions:

Dean Finishing School

Images of ONLINE classes taken
Thermal Engineering



Gokaraju Rangaraju
Institute of Engineering and Technology
Remedial Classes -Result analysis



Subject: Thermal Engineering
AY 2021-22 II Sem-II

| S.NO | Roll.NO | 27/1/2022 (3 pm to 4 pm) | 31/1/2022 (3 pm to 4 pm) | 1/2/2022 (3 pm to 4 pm) | 2/2/2022 (3 pm to 4 pm) | Result |
|------|------------|-----------------------------|-----------------------------|----------------------------|----------------------------|--------|
| 1 | 20241A0314 | P | P | P | P | Pass |
| 2 | 20241A0305 | P | P | P | P | Pass |
| 3 | 21245A0302 | P | P | P | P | Pass |
| 4 | 20241A0313 | A | A | A | P | Pass |
| 5 | 20241A0318 | P | P | P | P | Pass |
| 6 | 20241A0356 | P | P | A | P | Pass |
| 7 | 20241A0328 | P | P | P | P | Pass |
| 8 | 20241A0345 | A | P | P | P | Pass |
| 9 | 20241A0308 | P | A | P | P | Pass |
| 10 | 21245A0305 | P | P | P | P | Pass |
| 11 | 20241A0331 | P | A | P | P | Pass |
| 12 | 20241A0349 | P | P | P | P | Pass |
| 13 | 20241A0323 | A | P | P | P | Pass |
| 14 | 20241A0353 | P | P | P | P | Pass |
| 15 | 20241A0336 | P | P | P | P | Pass |
| 16 | 20241A0330 | P | P | P | P | Pass |
| 17 | 20241A0319 | P | A | P | P | Pass |
| 18 | 20241A0346 | P | P | P | P | Pass |
| 19 | 21245A0307 | P | P | P | P | Pass |
| 20 | 20241A0306 | A | P | P | P | Pass |
| 21 | 20241A0310 | P | A | P | P | FAIL |
| 22 | 20241A0316 | A | P | A | A | FAIL |
| 23 | 20241A0334 | P | A | P | A | FAIL |
| 24 | 20241A0342 | A | A | P | P | FAIL |

Gokaraju Rangaraju

**Institute of Engineering and Technology Mechanical Engineering
Remedial Classes -List of Students**



SUBJECT: Fluid mechanics and fluid machines. AY 2021-22 Sem 2

| Sl.No | Roll.No | Subject Code | Subject Name |
|--------------|----------------|---------------------|------------------------------------|
| 1 | 20241A0343 | GR20A2046 | Fluid mechanics and fluid machines |
| 2 | 20241A0312 | GR20A2046 | Fluid mechanics and fluid machines |
| 3 | 20241A0354 | GR20A2046 | Fluid mechanics and fluid machines |
| 4 | 20241A0307 | GR20A2046 | Fluid mechanics and fluid machines |
| 5 | 20241A0325 | GR20A2046 | Fluid mechanics and fluid machines |
| 6 | 20241A0305 | GR20A2046 | Fluid mechanics and fluid machines |
| 7 | 21245A0302 | GR20A2046 | Fluid mechanics and fluid machines |
| 8 | 20241A0313 | GR20A2046 | Fluid mechanics and fluid machines |
| 9 | 20241A0318 | GR20A2046 | Fluid mechanics and fluid machines |
| 10 | 20241A0317 | GR20A2046 | Fluid mechanics and fluid machines |
| 11 | 20241A0356 | GR20A2046 | Fluid mechanics and fluid machines |
| 12 | 20241A0328 | GR20A2046 | Fluid mechanics and fluid machines |
| 13 | 20241A0345 | GR20A2046 | Fluid mechanics and fluid machines |
| 14 | 20241A0308 | GR20A2046 | Fluid mechanics and fluid machines |
| 15 | 21245A0305 | GR20A2046 | Fluid mechanics and fluid machines |
| 16 | 20241A0333 | GR20A2046 | Fluid mechanics and fluid machines |
| 17 | 20241A0331 | GR20A2046 | Fluid mechanics and fluid machines |
| 18 | 20241A0337 | GR20A2046 | Fluid mechanics and fluid machines |
| 19 | 20241A0335 | GR20A2046 | Fluid mechanics and fluid machines |
| 20 | 20241A0349 | GR20A2046 | Fluid mechanics and fluid machines |
| 21 | 20241A0323 | GR20A2046 | Fluid mechanics and fluid machines |
| 22 | 20241A0353 | GR20A2046 | Fluid mechanics and fluid machines |
| 23 | 20241A0336 | GR20A2046 | Fluid mechanics and fluid machines |
| 24 | 20241A0330 | GR20A2046 | Fluid mechanics and fluid machines |
| 25 | 20241A0310 | GR20A2046 | Fluid mechanics and fluid machines |
| 26 | 20241A0319 | GR20A2046 | Fluid mechanics and fluid machines |
| 27 | 20241A0316 | GR20A2046 | Fluid mechanics and fluid machines |
| 28 | 20241A0346 | GR20A2046 | Fluid mechanics and fluid machines |
| 29 | 20241A0334 | GR20A2046 | Fluid mechanics and fluid machines |
| 30 | 20241A0342 | GR20A2046 | Fluid mechanics and fluid machines |
| 31 | 21245A0307 | GR20A2046 | Fluid mechanics and fluid machines |
| 32 | 20241A0322 | GR20A2046 | Fluid mechanics and fluid machines |
| 33 | 20241A0348 | GR20A2046 | Fluid mechanics and fluid machines |
| 34 | 20241A0303 | GR20A2046 | Fluid mechanics and fluid machines |

Syllabus

Subject: Fluid mechanics and fluid machines (II-II)

UNIT I Definition of fluid, Newton's law of viscosity, Units and dimensions- Properties of fluids, mass density, specific volume, specific gravity, viscosity, compressibility and surface tension, Control volume- application of continuity equation and momentum equation, Incompressible flow, Bernoulli's equation and its applications.

UNIT II Exact flow solutions in channels and ducts, Couette and Poiseuille flow, laminar flow through circular conduits and circular annuli-concept of boundary layer- measures of boundary layer thickness-Darcy Weisbach equation, friction factor, Moody's diagram.

UNIT III Need for dimensional analysis-methods of dimension analysis-Similitude-types of similitude Dimensionless parameters-application of dimensionless parameters-Model analysis.

UNIT IV Euler's equation-theory of roto dynamic machines-various efficiencies-velocity components at entry and exit of the rotor, velocity triangles-Centrifugal pumps, working principle, work done by the impeller, performance curves-Cavitation in pumps-Reciprocating pump-working principle.

UNIT V Classification of water turbines, heads and efficiencies, velocity triangles-Axial, radial and mixed flow turbines- Pelton wheel, Francis turbine and Kaplan turbines, working principles- draft tube-Specific speed, unit quantities, performance curves for turbines-governing of turbines.

Faculty Report on Subject

(Topics Covered)

Subject: Fluid mechanics and fluid machines (II-II)

Unit 1.

- ✓ Discussed **Definition of fluid, Newton's law of viscosity,**
- ✓ **Units and dimensions- Properties of fluids, mass density, specific volume,**
- ✓ **specific gravity, viscosity, compressibility and surface tension,**

Unit2.

- ✓ **Explained Exact flow solutions in channels and ducts,**
- ✓ **Couette and Poiseuille flow, laminar flow through circular conduits**

Unit 3.

- **Discussed Need for dimensional analysis–methods of dimension analysis–**
- **Similitude–types of similitude Dimensionless parameters**

Unit4.

- **Explained Euler's equation–theory of roto dynamic machines–various efficiencies–velocity components at entry and exit of the rotor,**
- **velocity triangles–Centrifugal pumps, working principle,**

Unit5.

- **Discussed Classification of water turbines, heads and efficiencies, velocity triangles-Axial, radial and mixed flow turbines-**
- **Pelton wheel, Francis turbine and Kaplan turbines, working principles**

Images of ONLINE classes taken
Fluid mechanics and fluid machines





GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING & TECHNOLOGY

FINISHING SCHOOL

REMEDIAL CLASSES (Academic support for students) Student Feed Back

Branch: MECH Year: II Sem: II

Subject: Fluid Mechanics and Fluid Machines

Faculty Name: Mr. BCH NOOKARAJU

| S.No | Item | Feedback |
|------|------------------------------|--|
| 1 | Material presented | ✓ Excellent/Very Good/Good/Average/Below Average |
| 2 | Teaching Clarity | ✓ Excellent/Very Good/Good/Average/Below Average |
| 3 | Covering of important topics | Excellent/✓ Very Good/Good/Average/Below Average |
| 4 | Doubts clarification | Excellent/✓ Very Good/Good/Average/Below Average |

Suggestions:

V N Ramakrishna

Dean Finishing School

**Gokaraju Rangaraju
Institute of Engineering and Technology Mechanical Engineering**



Remedial Classes -Result analysis

Subject: Fluid mechanics and Fluid machines

AY 2021-22 II Sem-II

| S.NO | Roll.NO | 27/1/2022 (3 pm to 4 pm) | 31/1/2022 (3 pm to 4 pm) | 1/2/2022 (3 pm to 4 pm) | 2/2/2022 (3 pm to 4 pm) | Result |
|------|------------|-----------------------------|-----------------------------|----------------------------|----------------------------|--------|
| 1 | 20241A0343 | P | P | P | P | Pass |
| 2 | 20241A0312 | P | P | P | P | Pass |
| 3 | 20241A0354 | P | P | P | P | Pass |
| 4 | 20241A0307 | A | A | A | P | Pass |
| 5 | 20241A0325 | P | P | P | P | Pass |
| 6 | 20241A0305 | P | P | A | P | Pass |
| 7 | 21245A0302 | P | P | P | P | Pass |
| 8 | 20241A0313 | A | P | P | P | Pass |
| 9 | 20241A0318 | P | A | P | P | Pass |
| 10 | 20241A0317 | P | P | P | P | Pass |
| 11 | 20241A0356 | P | A | P | P | Pass |
| 12 | 20241A0328 | P | P | P | P | Pass |
| 13 | 20241A0345 | A | P | P | P | Pass |
| 14 | 20241A0308 | P | P | P | P | Pass |
| 15 | 21245A0305 | P | P | P | P | Pass |
| 16 | 20241A0333 | P | P | P | P | Pass |
| 17 | 20241A0331 | P | A | P | P | Pass |
| 18 | 20241A0337 | P | P | P | P | Pass |
| 19 | 20241A0335 | P | P | P | P | Pass |
| 20 | 20241A0349 | A | P | P | P | Pass |
| 21 | 20241A0323 | P | A | P | P | Pass |
| 22 | 20241A0353 | A | P | A | A | Pass |
| 23 | 20241A0336 | P | A | P | A | Pass |
| 24 | 20241A0330 | A | A | P | P | Pass |
| 25 | 20241A0310 | P | A | P | P | Pass |
| 26 | 20241A0319 | P | P | P | P | Pass |
| 27 | 20241A0316 | P | P | P | P | Pass |
| 28 | 20241A0346 | A | P | P | P | Pass |
| 29 | 20241A0334 | P | A | P | P | Pass |
| 30 | 20241A0342 | A | P | A | A | FAIL |
| 31 | 21245A0307 | P | A | P | A | FAIL |
| 32 | 20241A0322 | A | A | P | P | FAIL |
| 33 | 20241A0348 | P | A | P | P | FAIL |
| 34 | 20241A0303 | P | A | P | A | FAIL |

Report on Remedial Classes

This is to inform you that Finishing school of GRIET is conducting Remedial classes for AY 21-22, B.Tech II & III year, I & II semester students to prevent them from failure.

Details are

1. Remedial classes are conducted in different Subjects to support the Students in clearing their backlogs. As the first step, classes are held for Final year and Marched out batches in three different schedules. Students were informed through SMS. Students shown lot of interest . Faculty gave tips as well as material for the students. 80-90% of the students who have attended got benefit and they passed in the exams.
2. The classes are aimed to help the students having a maximum of threebacklogs so that they will get the degree as per their academic calendar. Students preferred material and few tips as they were busy in Projects. For some subjects they came and attentive.
3. The sessions for II & I sem students are to prevent failure rate and thereby increasing transition rate. The subjects are selected based on I-semester results. To increase attendance for the classes a brief motivation lecture is organized with the key note address by HOD.

The following shows the courses for which Remedial classes are held and the Transition rate in such course:

| S.No | Course | No.of students attended | No.of students passed | Transition rate |
|------|------------------------------------|-------------------------|-----------------------|-----------------|
| 1 | Thermodynamics | 24 | 21 | 87.5% |
| 2. | Thermal Engineering | 24 | 20 | 83.3% |
| 3 | Fluid mechanics and fluid machines | 34 | 29 | 85.2% |