

GUDLAVALLERU ENGINEERING COLLEGE

Seshadri Rao Knowledge Village, GUDLAVALLERU

Department of Mechanical Engineering

Date: 28-01-2021.

CIRCULAR

All the faculties of Department of Mechanical Engineering are here by informed that Mechanical Engineering Department is conducting a workshop on “**Basic Design of HVAC system, its applications and Opportunities**” on 30th Jan, 2021. All the faculty members are requested to join this workshop.

Venue: MICROSOFT TEAMS

Time: 9:30 AM to 12:30 PM


H.M.E.



Gudlavalleru Engineering College
(An Autonomous Institute with Permanent Affiliation to JNTUK, Kakinada)
Seshadri Rao Knowledge Village, GUDLAVALLERU

Department of Mechanical Engineering

Date: 28.01.2021

CIRCULAR

All the students of III B.Tech Mechanical Engineering are requested to participate in One day workshop on “Basic Design of HVAC system, its applications and Opportunities” on 30th Jan, 2021 without fail.

Venue: MICROSOFT TEAMS

Time: 10:00 AM to 12:30 PM

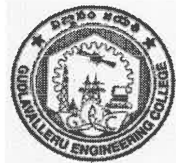

Coordinator


H.M.E.

ONE DAY WORKSHOP
ON

**“BASIC DESIGN OF HVAC
SYSTEM, ITS APPLICATIONS
AND OPPORTUNITIES”**

30th Jan, 2021



Organized by

**Department of Mechanical
Engineering**

**GUDLAVALLERU
ENGINEERING COLLEGE**

(An Autonomous Institute with Permanent Affiliation To
JNTUK, Kakinada)
Seshadri Rao Knowledge Village: Gudlavalluru
Krishna Dist. A.P.

Basic Design of HVAC system

HVAC stands for heating, ventilation, and air conditioning. This system provides heating and cooling to residential and commercial buildings. It can find HVAC systems anywhere from single-family homes to submarines where they provide the means for environmental comfort. Becoming more and more popular in new construction, these systems use fresh air from outdoors to provide high quality of indoor air.

The main functions of an HVAC system are interrelated, especially when providing acceptable indoor air quality and thermal comfort.

RESOUCE PERSON

JAYAKRISHNA K - HVAC Asst Engineering Manager,
CYIENT Ltd, Visakhapatnam

TOPICS

- ❖ Design of HVAC system & its applications and Opportunities

ELIGIBILITY

- ❖ Students of Mechanical Engineering

COORDINATOR

Dr.G Karuna Kumar , Assistant Professor
Sri. G.Ratna Kumar, Assistant Professor

VENUE

MICROSOFT TEAMS



JAYAKRISHNA K

Email Id: jayakrishna.mech@gmail.com || Contact No: +91- 9491639006

~HVAC Assistant Engineering Manager ~

PERSONAL DETAILS

- Date of Birth: 24th Apr'86
- Passport No: Z4188798; Valid till 07/ 01/ 2028
- Marital Status: Married
- Languages known: English & Hindi
- Nationality: Indian
- Religion: Hindu
- Communication Address: D No. 303, Neha Palace, Opp. Babu Saree shop, Ghattayya Center, Khammam, Telangana, India - 507002.
- No. of Dependents: Two
- Preferred Location: No Preference

SUMMARY

A dedicated professional with over 11.0 years' experience in HVAC Design and Piping Engineering in reputed organizations of Buildings, Factories, oil & gas in USA and INDIA. Presently, working with CYIENT Ltd., Visakhapatnam as Technical Lead (Mechanical and piping). Holds expertise in HVAC Design/ Piping Design/ Drafting experience, Drawing Presentation. Experience in entire spectrum of HVAC design/ Piping Design Engineering activities which include feasibility study and design of Marine and offshore platforms. Demonstrated skills in HVAC and Piping systems (Air-Conditioning, Ventilation, Cooling water, Hot water, Firewater etc.) On the technical front, talented in 2D & 3D computer design skills with Auto Cad, Micro Station and MS Excel, MS Word and MS PowerPoint. Proven track record in handling the entire process of project turnover starting from project initiation to the delivery stage. A mentor with excellent communication skills to deliver quality results & prove an asset to the organization.

AREA OF EXPERTISE

HVAC Design for Construction & Offshore Facilities
Installation and Commissioning

Piping Design for Construction & Offshore Facilities
Project Management

EMPLOYMENT SCAN

CYIENT Ltd, Visakhapatnam ||Sr. Technical Lead (Mechanical and piping) Client: Transocean, USA ||Since May'13

Key Responsibilities:

- Stellar in the preparation of HVAC design calculations, selection of equipment, arrangements, schematics like Ducting arrangement drawings, chilled water piping schematics, etc.
- Spearheading the duct design, pipe design & chiller plant room layout preparation as well as duct pressure drop, pipe pressure drop & pump head calculations.
- Responsible for the preparation of:
 - Design Basis Report (DBR) & Bill of Quantities (BOQ) with reference to the standard codes
 - General arrangement drawings, Hazardous area plans, Helideck marking plans and other outfit related drawings as per codes and standards.
 - Bilge and Ballast system in layout, detailed isometrics and schematic drawings.
 - Bill of materials, general piping notes, symbol legends, valve specifications etc.
 - Standards of drawing sheets, symbols, views, descriptions, text style, dimensions, layers & colors, scales etc. for internal use of company.
- Significantly, communicating with client to maintain the quality of drawings and query clarifications.
- Handling the project related documentation and their approval.

Larsen & Toubro Construction, Chennai ||Assistant Engineering Manager - Mechanical Department ||Jul'09 to Apr'13

Key Responsibilities:

- Involved in the detail heating and cooling load design calculations and worked with HAP (Hourly Analysis Program).
- Accountable for duct design, pipe design & chiller plant room layout preparation as well as duct pressure drop, pipe pressure drop & pump head calculations.

- Responsible for design of car parking (basement) ventilation using both conventional ducting system & jet fan system.
- Efficiently worked on the Lift well, lobby & staircase pressurization calculations.
- Prepared other discipline inputs like architectural requirements, Structural cutouts & electrical load related to HVAC equipment.
- Involved in the preparation of GFC drawings - chilled water piping layouts, ducting layouts with detailed sectional views.
- Coordinated with other disciplines and selection of HVAC equipment.
- Prepared the Design Basis Report (DBR) & Bill of Quantities (BOQ) with reference to the standard codes.
- Handled the wide range of products: Chillers, AHUs, Air Washers, VRV Units, Pumps, Ventilation Fans & Low side items like piping and valves.
- Discussed with supplier and Solving technical queries of equipment.
- Attended progress meetings Consult and make recommendations to clients on feasibility and Layouts.
- Worked in a Cross Function Team to Solve Engineering Bottle Necks and Suggest Value additions.
- Provided clarification, Guidance and Technical supports to construction, commissioning and QC Personnel.
- Troubleshooting the problems with optimized solutions, regular site visits and competent to take spot decisions to rectify the different issues.
- Worked on the HVAC design of Factories, IT parks, Residential buildings, Hospitals & Offshore facilities.

Projects Handled in L&T and Cyient:

- P&G Baby care factory in Mandideep, Bhopal (Phase-1&2) (300 TR X 2 Chillers), Client: Procter & Gamble, India
- P&G Hair care factory in Mandideep, Bhopal (250 TR X 2 Chillers), Client: Procter & Gamble, India
- Nestle amenity block in Samalkha, Haryana (100 TR), Client: Nestle, India
- Modernization of COD Jabalpur (Packaged AC Units – 200 TR), Client: Govt of India
- Manufacturing and casting shop for Renault-Nissan car factory (VRV Units – 200 TR). Client: Renault-Nissan
- Onboard survey to rig Development Driller-I & Actinia, both are in operation at South Atlantic Ocean & Pacific Ocean for Mud Piping System as-built update.

Codes & Standards

- Nimble- fingered with ISHRAE, ASHRAE, NBC, IGBC, GRIHA, ABS MODU, DNV and SOLAS.

Notable Highlights

- Received award from P&G as Troubleshooting expert for HVAC design.
- Received 'Associate of the Month' and 'Team of the Month' awards in current organization.
- BOSIET certified with validity up to Sep-2019.
- Received good feedback and appreciation from client for converting the whole Drilling piping schematics into Isometric view representation which had not been executed before. This has been captured as a poster on the Rig to identify the piping instruments easily.

IT Forte

- Well versed with AutoCAD 2D & 3D, Microstation 2D, CATIA V5, Pipe-Flo and MS Office.

Education

Master of Technology (Thermal Sciences-Mechanical) from National Institute of Technology (NITC), Calicut	2009
Bachelor of Technology (Mechanical) from JNTU Hyderabad, AP	2007
Intermediate from Board of Intermediate Education, Andhra Pradesh	2003
SSC from State Board of Secondary Education, Andhra Pradesh	2001

Gudlavalleru Engineering College

An Autonomous Institute with Permanent Affiliation to JNTUK, Kakinada

Seshadri Rao Knowledge Village: Gudlavalleru-521356

Department of Mechanical Engineering

Attendance Sheet For ONE DAY WORKSHOP on “Basic Design of HVAC System & Its Application and Opportunities”

S. No	Name Of the Student	Roll Number	Jan 30, 2021
1	AALA RAJASEKHAR	18481A0301	V
2	ABDUL ABID	18481A0302	V
3	AKASH MAILA	18481A0303	V
4	AKURATHI GOWTHAM KUMAR	18481A0304	V
5	ALLAM VENKATESH	18481A0305	V
6	AMBATI GANESH BABU	18481A0307	V
7	APPALAKUTTI VAMSI KRISHNA	18481A0308	V
8	ARAVAPALLI LOKESH KUMAR	18481A0309	V
9	ARUMALLA BHANU SYAM KUMAR	18481A0310	V
10	BACHU AJAY SAI MADHAV	18481A0312	V
11	BANDARU SRINIVAS	18481A0313	V
12	BATTULA MAHESH BABU	18481A0315	V
13	BEZAWADA GOVARDHAN RAO	18481A0316	V
14	BODIPOGU PAVAN KUMAR	18481A0317	V
15	BORRA SAI MAHESH	18481A0318	V
16	BUDDANA DINESH	18481A0319	V
17	CHENNA SAI RAM KUMAR	18481A0322	V
18	CHERUKUVADA NEERAJ RAM	18481A0323	V
19	CHIMMA SANJAY KIRAN	18481A0324	V
20	CHUKKA BHEEMESH	18481A0325	V
21	DAGANI ANIL	18481A0327	V
22	DARISE VIKAS SAI	18481A0328	V
23	DASARI DOONDI YESHWANTH	18481A0329	V
24	DASARI RAKESH	18481A0330	V
25	DASARI TEJA KUMAR	18481A0331	V
26	DEGALA HARI SAI TEJA	18481A0332	V
27	DUDDU TEJA SAI PRAVEEN	18481A0334	V
28	DUMPALA BHANU PRAKASH	18481A0335	V
29	EDE SANDEEP	18481A0336	V
30	GANJI SANDEEP	18481A0337	V
31	GEDDAM PRAVEEN REDDY	18481A0338	V
32	GHANTASALA KALYAN BABU	18481A0339	V
33	GOMATHOTI VISHAL VINCENT	18481A0340	V
34	GORIPARTHI PREM KUMAR	18481A0341	V
35	GORIPARTHI VENKATA SWAMY	18481A0342	V
36	GORIPARTI JAYARAM	18481A0343	V
37	GULIPALLI HANEESH	18481A0345	V
38	GUMMADDI SUSANTH	18481A0346	V
39	IDAMAKANTI BRAHMA REDDY	18481A0348	V

40	JANAMALA BHANU PRAKASH	18481A0349	V
41	JASWANTH KALVA	18481A0350	V
42	JONNALAGADDA BHANU LAKSHMI VENKATA GANESH	18481A0351	V
43	BATTIPATI NIKITHA	18481A0352	V
44	ILURI MOUNIKA	18481A0353	V
45	KADARU SHYLATHI (W)	18481A0354	V
46	KALIPATNAPU VENKATA SAI KRISHNA	18481A0355	V
47	KALUMURI RAJA VENKATA YESHWANTH	18481A0356	V
48	KANDALA ROHITH	18481A0357	V
49	KANKATA RUSHIKETH	18481A0358	V
50	KANUMURI BHARATH BABU	18481A0359	V
51	KARETI AJAY BABU	18481A0361	V
52	KATAM SAMUEL MORRIS	18481A0362	V
53	KATTEPOGU DILEEP	18481A0364	V
54	KATURI SAI KIRAN	18481A0365	V
55	KHIZARUR RAHAMAN	18481A0366	V
56	KODURU VINAY PRASANTH	18481A0367	V
57	KOLUSU NAGA VIJAYKUMAR	18481A0369	V
58	KOMMU SIVA	18481A0370	V
59	KOTA VENKATA PAVAN TEJA	18481A0371	V
60	KOVURU SAI SARATH	18481A0372	V
61	KOVVALI RAKESH	18481A0373	V
62	KUNAPURAJU SAI NARAYANA	18481A0374	V
63	MADDALI KARTHIK	18481A0375	V
64	MAHALI GIREESH VARMA	18481A0376	V
65	MAHAMMAD IQBAL	18481A0377	V
66	MAKKENA LEELA HARISH	18481A0378	V
67	MALLEMPALLI JOHN EBENAZAR	18481A0379	V
68	MANDALA ANJI REDDY	18481A0380	V
69	MANGADODDI CHETAN VENKATA KOMAL KUMAR	18481A0382	V
70	MANNEM LOHITH BALAJI	18481A0383	V
71	MATTA YASWANTH NAGA VENKAT	18481A0384	V
72	MEENIGA NAVEEN KUMAR	18481A0385	V
73	MEKALA RAHUL	18481A0386	V
74	MOHAMMAD KHAJA MOIN	18481A0387	V
75	MOKA TARUN KUMAR	18481A0388	V
76	MOTUPALLI PRADEEP	18481A0389	V
77	MURALA ASWINI GOWD	18481A0390	V
78	MURARI DEVA PRAKASH GOWD	18481A0391	V
79	MUTYALA BALA VEERA VENKATA VINAYBABU	18481A0392	V
80	NAIDU LOKESH	18481A0393	V
81	NARAHARISSETTY TANISHQ'	18481A0394	V
82	NARU SIVAREDDY	18481A0395	V
83	NELUPURI SANDEEP	18481A0396	V
84	NIDADHAVOLU KESAVA SAI MURALI KRISHNA	18481A0398	V
85	NOORA SAI KRISHNA	18481A0399	V
86	NUNE NAVEEN	18481A03A0	V

87	POTHANA YAMINI (W)	18481A03A1	V
88	PACHIGORLA TIRUMALA	18481A03A2	V
89	PADALA CHAITANYA KUMAR	18481A03A3	V
90	PALACHOLLA VEERA NARASIMHA MURTHY	18481A03A4	V
91	PATAPATI RAMESH	18481A03A6	V
92	PEKETI KARTHIK REDDY	18481A03A7	V
93	POLUKONDA SRIDHAR	18481A03A8	V
94	PONUGUMATI NITEESH	18481A03A9	V
95	PRESINGU SAI	18481A03B0	V
96	PULLAGURA MANOJ KUMAR	18481A03B2	V
97	PULLETIKURTHI KANAKA VENKATA SAI PRIYATHAM	18481A03B3	V
98	PUTLURI RAM MOHAN REDDY	18481A03B5	V
99	RAGHUMANDALA KRANTHI KUMAR	18481A03B6	V
100	RAJULAPATI SHYAM VENKAT RAM	18481A03B7	V
101	RAJULAPATI SRI RAM	18481A03B8	V
102	RAMANI SAI NAGA RAJU	18481A03B9	V
103	SAJJA SAI KRISHNA	18481A03C2	V
104	SAJJALA KRISHNA TEJA	18481A03C3	V
105	SAMMETA VENKATA SHESHA SIVA SAI NEERAJ	18481A03C4	V
106	SARIPALLI DINESH REDDY	18481A03C6	V
107	SEELAM VENKATA RAVI KUMAR	18481A03C7	V
108	SHAIK BARKATHALI	18481A03C8	V
109	SINGAVARAPU CHANDU	18481A03C9	V
110	SWARNA NAGA VENKATA MANIKANTA	18481A03D0	V
111	SYKAM VENKATA NAGENDRA KARTHIK KUMAR	18481A03D1	V
112	TADANKI BHARGAV TEJA	18481A03D2	V
113	THOTA NAGA ARAVIND	18481A03D3	V
114	THOTA SIVA SANKAR	18481A03D4	V
115	TURAGA KRISHNA KOUSHIK	18481A03D5	V
116	VANNEMREDDY SIVA KANTH	18481A03D6	V
117	VANTEDDU SAI PREETHAM	18481A03D7	V
118	VASA VENKATA ARAVIND	18481A03D8	V
119	VEERABATHINA SIDDARTHA	18481A03D9	V
120	VEKANURU BALA VAMSI	18481A03E0	V
121	VEMIREDDY AKHIL	18481A03E1	V
122	YALLA THOMAS FINNY	18481A03E4	V
123	YARLAGADDA GNANENDRA VAMSI	18481A03E5	V
124	YARRAMSETTI TEJESWAR	18481A03E8	V
125	YENUMULA SAI SANDEEP	18481A03E9	V
126	YERUKAPATI SANJAY KUMAR	18481A03F0	V
127	BOTLA KEERTHI SRIDATTA	19485A0301	V
128	CHINAMUTHEVI NAGA RAVI KIRAN	19485A0302	V
129	CHINTA VEERA VENKATA SUBRAHMANYAM	19485A0303	V
130	GUGULOTHU NAVEEN NAIK	19485A0304	V
131	ADOTHU ESHWAR	19485A0305	V
132	CHANDANA ARUN KOWSHIK	19485A0306	V
133	CHOPPAVARAPU NEERAJ	19485A0307	V

134	DASARI KRISHNA VAMSI	19485A0308	V
135	KALIDINDI RAKESH	19485A0309	V
136	MUDRAGADDA KRUPA PAUL	19485A0310	V
137	JAKKULA MAHESH	19485A0312	V
138	JAKKULA SUNAND	19485A0313	V
139	KOLUKULA JAYA NAGA CHAITANYA	19485A0314	V
140	BHEEMAVARAPU NAGA LAKSHMI	19485A0315	V
141	PANDRAJU VIJAYA SRI	19485A0316	V
142	SRIPATHI ALEKHYA	19485A0318	V
143	KANCHARLA MADHU KUMAR	19485A0319	V
144	NAKKELLA NARINAIDU	19485A0320	V
145	CHEPALA APPALARAJU	19485A0321	V
146	PINJALA YOGESH SIVA PURNA	19485A0322	V
147	VENNAPUSA LAKSHMA REDDY	19485A0323	V
148	NIMMALAPALLI VENKATA SAI SRICHARAN	19485A0324	V
149	REMALLI SUMANTH	19485A0325	V
150	SHAIK RIYAZ	19485A0326	V
151	SIMMA RAVI HEMANTH	19485A0327	V
152	SOBBANA CHANDRAHASS JOSHI	19485A0328	V
153	TANGELLAMUDI YUVA KONDA RAJESH	19485A0329	V
154	VUJJI DHARMENDRA SAI KUMAR	19485A0332	V
155	SHAIK AZARUDDIN	19485A0333	V
156	SRAVANAM DANESH	19485A0335	V
157	ATHANTI VARDHAN	17481A0305	V
158	AVULA RAKESH	17481A0306	V
159	DASARI VENU	17481A0320	V
160	DHARANIKOTA UMA MAHESH	17481A0323	V
161	KADIYALA MANEESH CHOWDARY	17481A0340	V
162	TIRUMALASETTI DANNI SIVA VEERA BHARGAV	17481A03A1	V

R. J. K.

A. J. K.



GUDLAVALLERU ENGINEERING COLLEGE

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Seshadri Rao Knowledge Village, Gudlavalluru

Department of Mechanical Engineering

CERTIFICATE

This is to certify that Mr/ Mrs ALLAM VENKATESH bearing

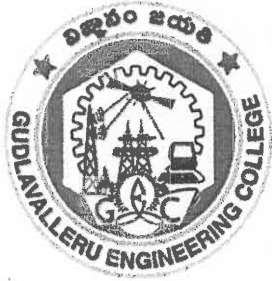
Roll No .. 18481A0305 has successfully completed One Day Workshop on "Basic Design of

HVAC system, & its applications and Opportunities" on 30th January 2021

Coordinator

Resource Person

H. M. E



GUDLAVALLERU ENGINEERING COLLEGE

(An Autonomous Institution with Permanent Affiliation to JNTUK, Kakinada)

Seshadri Rao Knowledge Village, Gudlavalleru

Department of Mechanical Engineering

CERTIFICATE

This is to certify that Mr/ Mrs ABDUL ABID bearing

Roll No. 18481A0302 has successfully completed One Day Workshop on "Basic Design of

HVAC system, & its applications and Opportunities" on 30th January 2021

R. Naruna Kumar

Coordinator

[Signature]

Resource Person

[Signature]

H.M.E

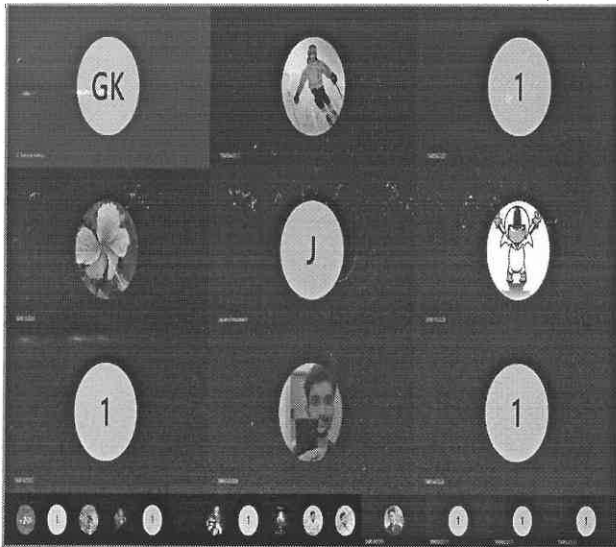
GUDLAVALLERU ENGINEERING COLLEGE

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Seshadri Rao Knowledge Village, Gudlavalleru

Department of Mechanical Engineering

Photos of One day Workshop on Design of HVAC & its Applications and Opportunities”.



BASEMENT VENTILATION

As per the building code basements should be ventilated as per the rates mentioned in the code.

CODE	NBC	BS
Normal ventilation	10 ACH	6 ACH
Smoke mode	30 ACH	10 ACH

V - VENTILATION

Natural Ventilation

- Supply of outside air into a building through window or other openings is called natural ventilation
- Natural ventilation achieved by-
 - 1) Wind direction and velocity of wind outside
 - 2) Convection effects arising from temperature

It is difficult to calculate ventilation rate.

Heat Load Calculation Sheet


Room Name	Area	Volume	Roof	Wall	Door	Window	Floor	Internal	External
Room 1	100	3000	10	20	5	15	5	10	5
Room 2	150	4500	15	30	7.5	22.5	7.5	15	7.5
Room 3	200	6000	20	40	10	30	10	20	10

Dr GKK

PROGRAM REPORT

- Name of the Program** : One day workshop "Basic Design of HVAC system, it's applications and opportunities"
- Dates** : 30.01.2021
- Details of the Resource Person** : Jaya Krishna K - HVAC Asst Engineering Manager, CYIENT Ltd, Visakhapatnam.
- Objective of the Program** : To impart knowledge on various heating, cooling and ventilation applications for human needs.
- Outcome of the Program** : Students are able to understand the concept of heating, cooling and ventilation across various stages of domestic, industrial usage and explore the opportunities in the same.
- No. of Participants** : 162
- Concluding Remarks** : HVAC is a highly demandable professional program has huge opportunities in industries specific to food and agriculture sector. The program intends to create an impact to drive the student community to explore various employment opportunities.


Coordinator


H.M.E.
Head of the Department
Mechanical Engineering
Seshadri Rao
Gudlavalleru Engineering College
Seshadri Rao Knowledge Village
Gudlavalleru - 521 350, Krishna District. A.P.