JIS COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

INTERNAL COMBUSTION ENGINE LAB

Details of Laboratory:

Lab in-charge: Mr. Bikash C Bhunia

Internal Combustion Engine Laboratory is a well equipped laboratory which provides ideas on practice of handling IC engines and measuring the performance parameters. This laboratory is scheduled for 6th semester Mechanical engineering students. Apart from curriculum, some additional experimental setups are there which helps the students to enhance their knowledge. Students also get opportunity to implement their ideas through various application oriented micro projects.

Major Equipments:

1	Cut Model of IC Engine (4stoke Petrol And Diesel Engine)
2	Cut Model of IC Engine (2 Stoke Petrol And Diesel Engine)
3	Cut Model With Valve Timing Diagram Of Petrol Engine.
4	Cut Model With Valve Timing Diagram Of Diesel Engine.
5	Cleveland Apparatus To Determine Flash Point And Fire Point.
6	Bomb Calorimeter.
7	Single Cylinder 4 -Stroke Diesel Engine Test Rig With Mechanical Break.
8	Single Cylinder 4-Stroke Diesel Engine Test Rig With Electrical Break
9	Four Cylinder 4-Stroke Petrol Engine Test Rig With Electrical Break

List of Experiments:

Sl. No.	Description
1	Study of cut model of IC Engine (4- stroke petrol and diesel engine)
2	Study of cut model of IC Engine (2-stroke petrol and diesel engine)
3	Study of valve timing diagram of petrol engine.
4	Study of valve timing diagram of diesel engine.
5	Determine of flash point and fire point of sample oil.
6	Determine of calorific ofa fuel by bomb calorimeter.
7	Performance test of an IC Engine using mechanical rope break dynamometer.
8	Performance test of an IC Engine using electrical break dynamometer.
9	Performance test of a multi cylinder petrol engine by Morse method.

Lab Occupancy

JIS College of Engineering
Lecture and Lab schedule for odd semester 2018-2019 STREAM/BATCH: ME- 3A
B.Tech 3rd Year classes Room No.Main Building 420

DAYS	10 am to 11 am	11 am to 12 am	12 pm to 1pm	1 to 2pm	2 to 3pm	3 to 4 pm	4 to 5 pm	5 to 6 pm
MON				BREAK				
TUE						ME 681,Gr.ME3A(2)[SKB] ME 682,Gr.ME3A(1)[MRI+BD]		
WED						ME 693,Gr.ME3A(2)[BCB] ME 692,Gr.ME3A(1)[SKB]		
THU						ME 693,Gr.ME3A(1)[BCB] ME 692,Gr.ME3A(2)[SKB]		
FRI								

ME 601-IC Engine & Gas Turbine, ME 602- Machining Principles & Machine Tools, ME 603- Design of Machine Elements-II,ME604A-Power Plant Engineering,ME 604B-Gas Dynamics and Jet Propulsion, ME605A-Advanced Welding Technology, ME 605B-CAD/CAM,HU(ME)601-Economics & Accountancy, ME 693- Internal Combustion Engine Lab, ME 692- Machining & Machine Tools Lab, ME 681-Mini Project, ME682-Machine Design Practice.

Faculty name: PKB- Dr. P.K. Bardhan,, SG-Dr. Sandip Ghosh, ARS-Dr.Anal Ranjan Sengupta, MRI- Mr. Munshi Rasidul Islam, SKB- Mr. Shishir Kumar Biswas, AS - Mr. Anirban Sarkar, SH-Mr. Subhasish Halder, BCB - Mr. Bikash Chandra Bhunia, TP- Mrs.Thia Paul, DM-Mr.Dhiraj Mondal, AK-Mr.Arnab Kundu, SM- Mr. Sourav Majumder,AG-Dr.Anindya Guha

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Routine Coordinator	**HOD**	**Principal**
(Prof. P. Biswas)	**(Prof. (Dr.) S. Ghosh)**	**(Prof. (Dr.) M. R. Dave)**

JIS College of Engineering
Lecture and Lab schedule for odd semester 2018-2019 STREAM/BATCH: ME-3B
B.Tech- 3rd Year classes - Room No.202 ME Building Block-A

DAYS	10 am to 11 am	11 am to 12 am	12 pm to 1pm	1 to 2pm	2 to 3pm	3 to 4 pm	4 to 5 pm	5 to 6 pm
MON				BREAK	ME 693,Gr.ME3B(1)[UR] ME 692,Gr.ME3B(2)[AK]			MENTORS MEET
TUE						ME 692,Gr.ME3B(1)[AK] ME 693,Gr.ME3B(1)[UR]		
WED								
THU								
FRI								

ME 601- IC Engine & Gas Turbine, ME 602- Machining Principles & Machine Tools, ME 603- Design of Machine Elements-II, ME604A-Power Plant Engineering, ME 604B-Gas Dynamics and Jet Propulsion, ME605A-Advanced Welding Technology, ME 605B-CAD/CAM,HU(ME)601-Economics & Accountancy, ME 693- Internal Combustion Engine Lab, ME 692- Machining & Machine Tools Lab, ME 681-Mini Project, ME682 -Machine Design Practice.

Faculty name: PKB - Dr. P.K. Bardhan,SP- Dr. Suresh Prasad, UR-Mr.Uttam Roy,SS-Mr.Sujoy Saha, SG - Dr. Sandip Ghosh,MM-Dr. Manish Mukhopadhya, MRI-Mr.Munshi Rasidul Islam, SKB-Mr.Shishir Kumar Biswas, AS-Mr.Anirban Sarkar, SH-Mr. Subhasish Halder, BCB - Mr. Bikash Chandra Bhunia, TP- Mrs.Thia Paul, DM-Mr.Dhiraj Mondal,TS-Tanmoy Sarkar, AK-Mr.Arnab Kundu ,SM-Mr.Sourav Majumder

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Name of the Course: INTERNAL COMBUSTION ENGIN LAB

Course Code: ME 693

Prerequisite: ENGINEERING THERMODYNAMICS, IC ENGINE

Course Objective: To train students with hands on practice of handling IC engines and measuring the performance parameters

Course Outcomes:

After the completion of this course, the student should be able to:

ME 693.1. Understand the practical operation of 2 stroke and 4 stroke I.C engines using valve timing diagram

ME 693.2. Analyze the performance of multi cylinder engines with the variation of various performances like load and speed.

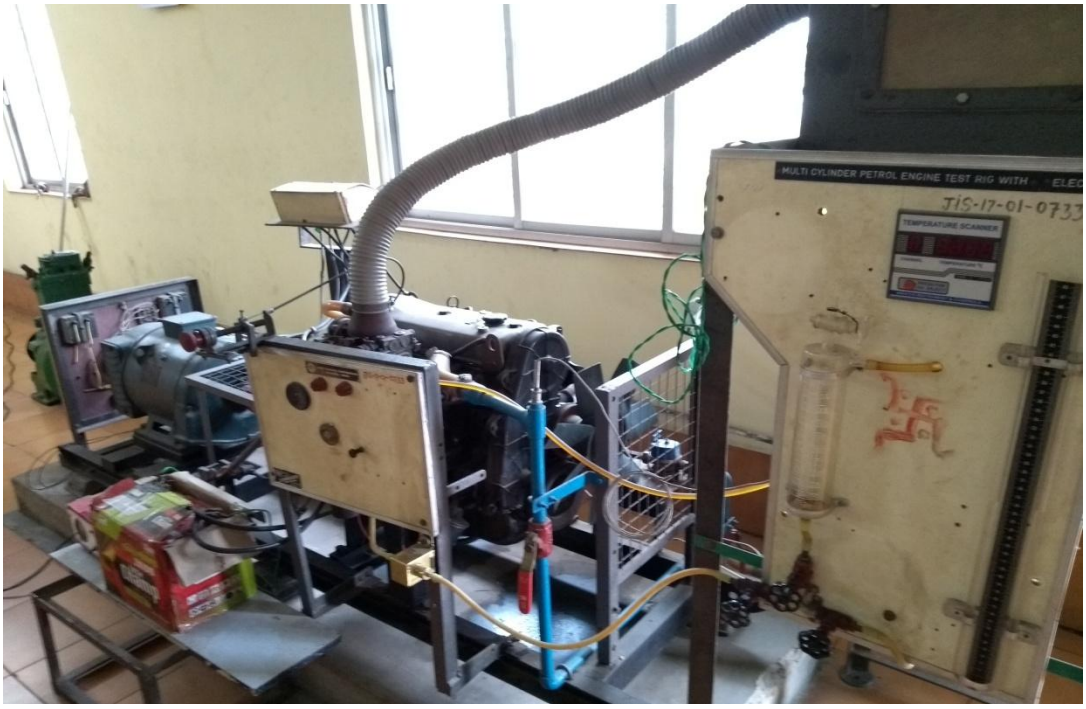
ME 693.3. Determine the quality of Engine fuels by analyzing its calorific value.

ME 693.4. Estimate the constituents of combustion products for emission characteristics related to public safety.

Course Articulation Matrix:

CO Codes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
ME693 .1	1	-	2		-		-	-	2	1	1	1	2	3	2
ME693 .2	1	-	3	2	-	1	-	-	3	1	1	2	2	3	2
ME693 .3	-	-	2	-	-	2	2	-	3	1	1	3	1	3	1
ME693 .4	-	3	2	-	-	2	3	1	3	1	1	3	1	2	3
AVG	1	3	2.25	2	1.6	2.5	1	2.75	1	1	2.25	1.5	1.5	2.75	2

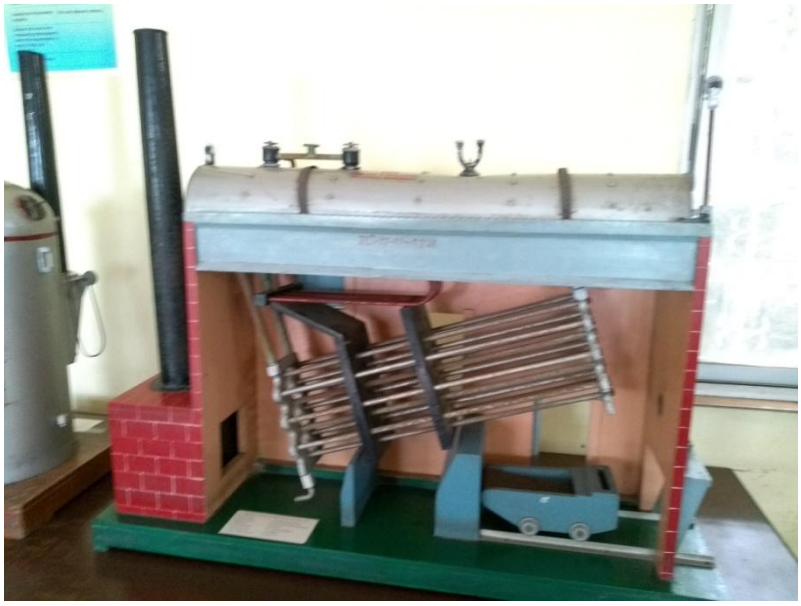
Apparatus Details:



MORSE TEST ON MULTI CYLINDER ENGINE

LOAD TEST ON SINGLE CYLINDER 4S DIESEL ENGINE

CUT MODEL OF 4S DIESEL ENGINE



CUT MODEL OF BABCOX & WILLCOX BOILER

CUT MPDEL OF 4S & 2S DIESEL AND PETROL ENGINE

CUT MODEL OF 4S PETROL ENGINE