

**Maulana Abul Kalam Azad University of Technology, West Bengal***(Formerly West Bengal University of Technology)***Syllabus for B. Tech in Electrical Engineering***(Applicable from the academic session 2018-2019)*

<b>Name of the course</b>		<b>THERMAL POWER ENGINEERING LABORATORY</b>
<b>Course Code: ES-ME-491</b>		<b>Semester: 4<sup>th</sup></b>
<b>Duration: 6 months</b>		<b>Maximum marks:100</b>
<b>Teaching Scheme</b>		<b>Examination scheme:</b>
<b>Theory: 0 hr/week</b>		<b>Continuous Internal Assessment:40</b>
<b>Tutorial: 0 hr/week</b>		<b>External Assessment: 60</b>
<b>Practical: 2 hrs/week</b>		
<b>Credit Points:1</b>		
	<b>Laboratory Experiments:</b>	
1.	Study of Cut Models – Boilers IC Engines: Lanchashire Boiler, Bahcock & Willcox Boiler, Cochran Boiler, Vertical Tubular Boiler, Locomotive Boiler, 4S Diesel Engine, 4S Petrol Engine, 2S Petrol Engine	
2.	Load Test on 4 Stroke Petrol Engine & Diesel Engine by Electrical Load Box.	
3.	Load Test on 4 Stroke Diesel Engine by Rope Brake Dynamometer.	
4.	Heat Balance on 4 Stroke Diesel Engine by Rope Brake Dynamometer & by Electrical Load Box.	
5.	Valve Timing Diagram on 4S Diesel Engine Model & 4S Petrol Engine Model	
6.	To find the Calorific Value of Diesel Fuel & Coal by Bomb Calorimeter	
7.	To find the Flash Point & Fire Point of Petrol & Diesel Fuel	
8.	To find the Cloud Point & Pour Point of Petrol & Diesel Fuel	
9.	To find Carbon Particle Percentage in Diesel Engine Exhaust Smoke by Smokemeter and trace the BHP Vs. % Carbon Curve	
10.	Measurement of the Quality of Steam – Enthalpy & Dryness fraction	

**Course Outcome:**

After completion of this course, the learners will be able to

1. identify appropriate equipment and instruments for the experiment
2. construct experimental setup with appropriate instruments and safety precautions
3. identify different parts of Lanchashire Boiler, Bahcock & Willcox Boiler, Cochran Boiler, Vertical Tubular Boiler, Locomotive Boiler, 4S Diesel Engine, 4S Petrol Engine, 2S Petrol engine
4. test 4 stroke petrol engine by electrical load box and diesel engine by electrical load box and rope brake dynamometer
5. find calorific value, flash point, fire point, cloud point, pour point of fuel.
6. work effectively in a team

Special Remarks: The above-mentioned outcomes are not limited. Institute may redefine outcomes based their program educational objective.