

Faculty of Mechanical Engineering
M.E. Internal Combustion Engineering
(R 2017) Semester – I
IC5111 I.C. Engines Laboratory
(Requirements for a batch of 25 students)

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	To carry out disassembly and assembly of SI and CI engines, Institution should have a dedicated SI and CI engine for this purpose only (preferably an automotive engine)	1		
2.	The above same facility can be used for study and drawing of engine components with dimensions	1		
3.	The Institution should have one dedicated SI engine coupled with a dynamometer, temperature, flow, speed sensors and measuring instruments such as emission analyser, combustion parameters (Pressure – crank angle, pressure – volume, log pV, rate of pressure rise, rate of heat release, total heat release, mass burned fraction, start of combustion, end of combustion, combustion duration etc.) analyser to carry out the experimental study on SI engine with conventional and alternate fuels. For the use of alcohol and gaseous fuels preferably they should have all the necessary items such as (gas carburetor/gas injectors/ alcohol compatible injectors etc	1		

4.	The Institution should have one dedicated CI engine coupled with a dynamometer, temperature, flow, speed sensors and measuring instruments such as emission analyser (5 gas emission analyser and smoke meter is must for the study), combustion analyser (a low cost combustion analyser capable of analysing 100 cycles with 1 deg CA resolution is must) to carry out the experimental study on CI engine with conventional and alternate fuels	1		
5.	The institution should have either a modified single cylinder stationary CRDI engine or an multi cylinder automotive CRDI diesel engine with calibrated ECU for conducting this study along with emission and combustion analysers	1		
6.	The institution should have one dedicated stationary single cylinder diesel engine facility equipped with air preheater and fuel preheater to study its effect on performance and emission	1		
7.	The facility mentioned in 6 can be used for studying the volumetric efficiency and equivalence ratio under various load at constant speed	1		
8.	The institution should have a digital flash and fire point or manual flash and fire point apparatus set up for studying flash and fire point of various oil samples	1		
9.	The institution should have one number of redwood viscometer apparatus for determining the viscosity of oils	1		

Faculty of Mechanical Engineering
M.E. Internal Combustion Engineering
(R 2017) Semester – II
TE5261 THERMAL SYSTEMS SIMULATION LABORATORY
(Requirements for a batch of 25 students)

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Modeling software like ProE, Gambit, CATIA, etc, Analysis software like Ansys Fluent, CFX, Fluidyn, COMSOL, etc, Equation solving software like Matlab, Engineering equation solver, Computer	25		