

The following gives a top-level description of a project currently being run for “Main Project Part A”, 2<sup>nd</sup> semester 3<sup>rd</sup> year.

Student: Virak Bol

Supervisor: Dr Paul Bland

Working title: “A study on the effect of varying engine parameters, such as fuel type, on the performance of an internal combustion engine”.

The overall aims:

- Project aim: To design and build a test rig with a full test programme in order to obtain experimental data in support of improving the performance of an internal combustion engine.
- Academic aim: To develop technical knowledge, as well as hands on and experiment design experience.

Description:

This project includes the need for background research into engine parameters, engine applications, current research activities, motivation for such a study, what is meant by “performance”, other engine parameters that can also be varied and their effect on performance, as well as budgeting, purchase, design, build and test activities.

A test matrix would have to be justified based on the above, and produce useful data to support recommendations of practical use for the chosen engine application, as well as recommendations for further detailed research.

Theoretical content includes basic engine mechanics and dynamics, thermodynamics, combustion science, design and instrumentation.

Other points of interest:

- Grant applications may be submitted to one or more institutions, and/or extra financial or resource support from industry, supplementing the budget for test equipment and other project expenses.
- One or more co-supervisors from other Universities may be involved.