#### Term UROP is offered: Fall 2021

#### UROP Department, Lab or Center: D-Lab MIT Faculty Supervisor Name: Jack Whipple

Project Title: Design & Simulation of IC engine subsystem modules

Project Description: As we hope for a rapid conversion of the world's fleet of vehicles to electrify, Internal Combustion engines will remain in some very small sectors such as recreation and competition. Student will work directly with and independently from a shop manager to create design detail models using real world constraints supported with textbook materials and analyze with simulation. Likely areas of study include heat transfer & water jacket design, acceleration & inertial profiles, vibration modeling & balancing, & fluid flow. Expected tools include Solidworks Simulation & ANSYS.

Prerequisite: No prior knowledge of Internal Combustion Engines required. A stout constitution for learning powerful but difficult software plus the ability to endure video tutorials is a must.

Students may perform this UROP for academic credit, or apply to the UROP office for direct funding.

Interested candidates should email [whipple@mit.edu](mailto:whipple@mit.edu) with a brief explanation of why they are interested in this project and describe any relevant previous experience.