UNIVERSITY *of* LIMERICK
OLLSCOIL LUIMNIGH

Stokes Research Institute

Learning Outcomes

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Thermodynamics is a funny subject. The first time you go through it, you don't understand it at all. The second time you think you understand it, except for one or two points. The third time, you know you don't understand it, but by that time you are so used to it, it doesn't bother you anymore

Learning Outcome	**Programme Outcome(s)**	**Programme Area(s)**	**Assessment Mode(s)**
1. To articulate Joules experiments and the consequence being a statement of the first law of thermodynamics.	1	1,2	Written Exam
2. Apply the first law of thermodynamics to various open and closed processes and to represent these on a P-V diagram.	1,2	1,2	Written Exam
3. To describe reversibility and the consequence on process efficiency.	1,2	1,2	Written Exam
4. To articulate the many statements of the second law of thermodynamics.	1	1,2	Written Exam
5. Derive analytical expressions for changes in enthalpy, entropy, heat transfer and work done for various processes.	1	1,2	Written Exam
6. To understand, state and analyse the processes representing a Carnot cycle, Rankine Cycle, gas turbine cycle and reciprocating petrol and diesel engine cycle.	1,2	2	Written Exam
7. To analyse improvements of a simple engine cycles including heat exchange, two-stage compression with inter-cooling and two-stage expansion with heating.	1,2	2	Written Exam