

ME 552 Aircraft Propulsion (3-0-0-6)

Introduction to aircraft propulsive devices – piston-prop, turbojet, turboprop, turbofan, turbo-shaft and ramjet engines; Propfans/Unducted fan engines; Engine thrust and performance parameters, thermal, propulsive and overall efficiencies; Two and three spool configurations; Cycle analysis of ideal and real turbojet, turbofan, turboprop engines; Engine performance with varying speed and altitude; Methods of thrust augmentation; Modern aircraft engines, their architecture and performance parameters; Analysis of ramjet and scramjet engines; Engine components – Intakes, combustors, afterburners, and nozzles; Turbo-machinery aerodynamics; Design and off-design performance; Turbine cooling methods; Component matching; Environmental considerations; Blade design and cascade theory.

References

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4. T. A. Ward, Aerospace Propulsion Systems, Wiley, 2010.
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