Khaja Bandanawaz University
Faculty of Engineering & Technology
Department of Aeronautical Engineering

Ph.D. Entrance Examination Syllabus

Aeronautical Engineering.

Aerodynamics

Circulation theory of lift, Downwash and induced drag, Supersonic flow & Mach cone, Boundary layer separation & stall, Wing aspect ratio & efficiency.

Aircraft Structures

Aircraft materials – Aluminium alloys, Fatigue and cyclic loading failure, Shear force and bending moment relationships, Column buckling – Euler's formula.

Propulsion

Turbofan bypass ratio, Combustion chamber in gas turbine, thrust equation – Newton's Second Law, Critical pressure ratio & choked flow in nozzles, Propulsive efficiency.

Flight Instruments & Systems

Altimeter principle – pitot-static system, Fly-by-wire systems, Black box / Flight data recorder, INS – Inertial Navigation System, Glass cockpit – electronic display systems.