Chapter 12 and 13 - Power screws and fastening methods

Thread systems for fasteners and power screws

1 Threaded Fastener Forms

[Diagram of thread forms with annotations for helix angle, lead angle, and various diameters and thread heights.]
2 Power Screw Forms

![Diagram of a power screw form with labels for various parts including load, pitch, major radius, thrust collar, thrust washer, mean collar radius, support frame, and input torque to raise load.]

(a) Square thread.

(b) Modified square thread.

(c) Acme thread. Note: \( r_f = 0.06p \) (max).

(d) Buttress thread (unidirectional loads only).
3 Power Screw/Threaded Fastener Mechanics

Write derivation of torque to raise below:

Figure 1: Unwrapped inclined plane on which nut travels