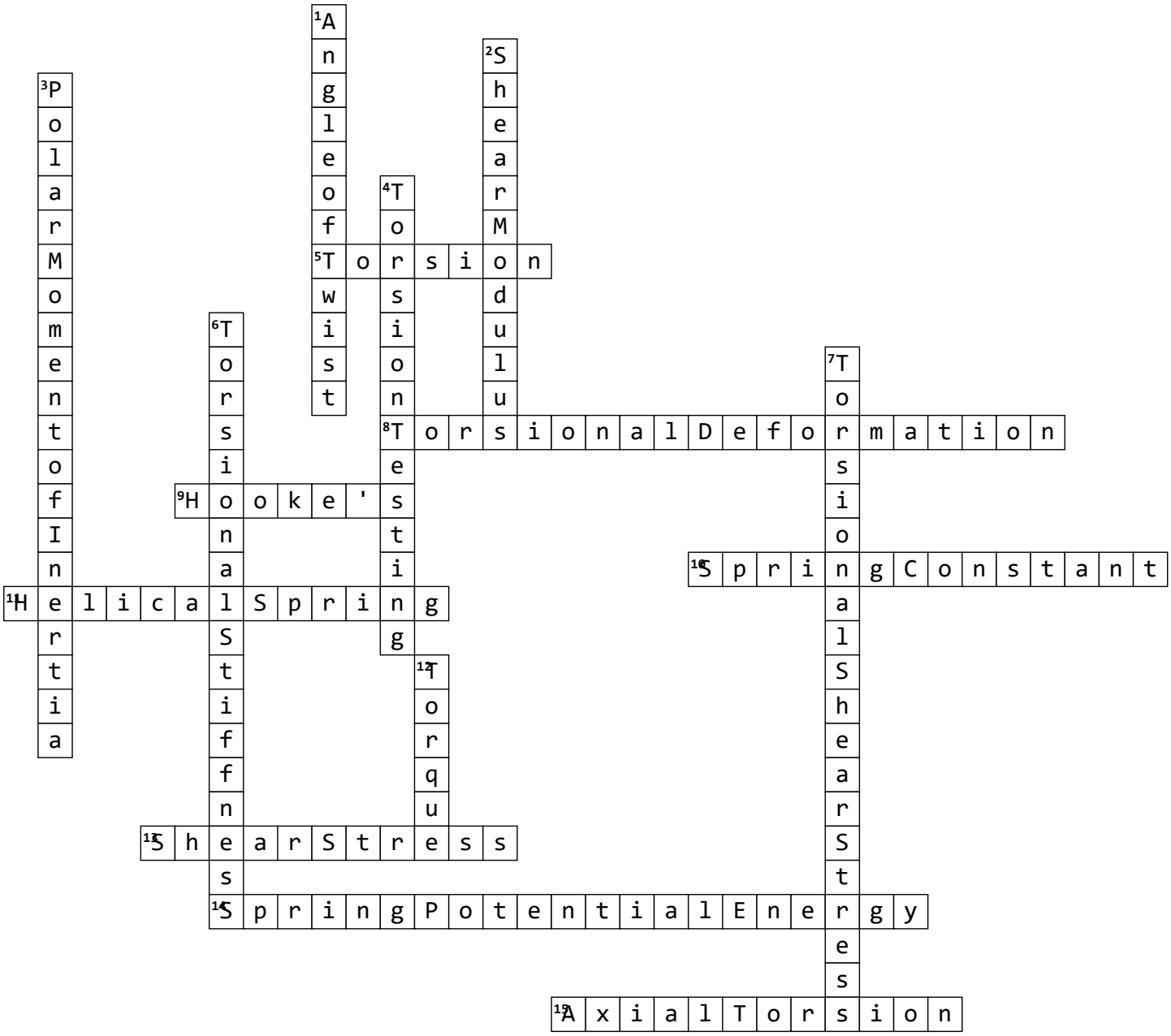
23AST201-Mechanics of Solids for Aerospace-Unit-4



Across

5. The twisting of an object due to applied torque, resulting in shear stress and strain.

8. The twisting or angular displacement experienced by a shaft under torsion.

9. Law The principle stating that the force exerted by a spring is proportional to its extension or compression.

10. The measure of a spring's stiffness, defined as the force required to compress or extend it by one unit.

11. A type of spring that works on the principle of torsion, coiled into a helix shape.

Down

1. The amount of rotation experienced by a shaft due to applied torque, proportional to the length of the shaft.

2. A material property describing its ability to resist shear deformation, relevant to torsion calculations.

3. A measure of a shaft's resistance to torsion, depending on its cross-sectional shape.

4. A method used to determine the shear modulus and torsional properties of a material or component.

13. The internal stress developed within a material due to torsion, acting parallel to the cross-section.

14. The energy stored in a spring when it is compressed or stretched, calculated as $\frac{1}{2} k x^2$.

15. The twisting of a shaft around its longitudinal axis, as opposed to bending or compression.

6. The resistance of a shaft to twisting, proportional to its polar moment of inertia and shear modulus.

7. The shear stress resulting from applied torque, calculated using the polar moment of inertia.

12. A rotational force applied to a shaft or object, causing it to twist.