



Program and Degree: BSc in Aerospace Engineering	
Course Description	
Course Title	Statics
Prerequisites	physics I, General Mathematics I
The course aims	<p>Students' acquaintance with the fundamentals of analysis of statics and equilibrium of objects.</p> <ol style="list-style-type: none"> 1- Ability of mathematical modeling of mechanical problems in steady state and equilibrium 2- Determination of the intrinsic properties of objects, such as calculating the mass and the location of the center of mass, the moment of inertia and inertia concepts 3- The concept of forces imposed on an object and external forces and friction
Contents	<ol style="list-style-type: none"> 1- Static Principles, Numerical and Vector Quantities and Newton's New Laws 2- Force and torque systems, equilibrium and equilibrium conditions in the surface and space 3- determinate and indeterminate Static systems 4- Structures: Introduction of Trusses, surface and Spatial structures, Force Analysis in Structural Components 5- Distributed forces: center of gravity and mass center, center of surface and center of volume, flexible cables, beams and bending and torsion forces, floating force 6- Friction: Introducing the friction phenomenon and its types. Dry and viscose friction 7- Virtual work and analysis and analysis of virtual work methods and the study of equilibrium stability 8- moment of Inertia: the surface moment, the definition of the moment of inertia, the radius of gyration, the rules of axis transfer in the inertia momentum calculations
Duration	1 Semester (16 weeks)
Course Hours	3 hours/week
Course Type	Rquired