Instructors:
Section 03: Dr. Bahadır ALYAVUZ, Room Number: 213
Section 04: Dr. Kurtuluş SOYLUK, Room Number: 244

Assistant:
Nalan KAYA, Room Number: 243


Grading: 1st midterm 30% + 2nd midterm 30% + final exam 40%
Attendance to min 70% of total semester hours is required

TENTATIVE COURSE CONTENT

CH12- Kinematics of a Particle
• Rectilinear Kinematics: Continuous Motion
• Rectilinear Kinematics: Erratic Motion
• General Curvilinear Motion
• Curvilinear Motion: Rectangular Components
• Motion of a Projectile
• Curvilinear Motion: Normal and Tangential Components
• Curvilinear Motion: Cylindrical Components
• Absolute Dependent Motion Analysis of Two Particles
• Relative-Motion analysis of Two Particles Using Translating Axes

CH13- Kinetics of a Particle: Force and Acceleration
• Equation of Motion for a System of Particles
• Equations of Motion: Rectangular Coordinates
• Equations of Motion: Cylindrical Coordinates

CH14- Kinetics of a Particle: Work and Energy
• The Work of a Force
• Principle of Work and Energy
• Principle of Work and Energy for a System of Particles
• Conservative Forces and Potential Energy
• Conservation of Energy

CH15- Kinetics of a Particle: Impulse and Momentum
• Principle of Linear Impulse and Momentum
• Principle of Linear Impulse and Momentum for a System of Particles
• Conservation of Linear Momentum for a System of Particles
• Impact
• Angular Momentum
• Relation Between Moment of a Force and Angular Momentum
• Principle of Angular Impulse and Momentum

CH16- Planar Kinematics of a Rigid Body
• Planar Rigid Body Motion
• Translation
• Rotation about a Fixed Axis
• Absolute Motion Analysis
• Relative Motion Analysis – Velocity
• Instantaneous Center of Zero velocity
• Relative Motion Analysis – Acceleration
• Relative Motion Analysis Using Rotating Axes

CH17- Planar Kinetics of a Rigid Body: Force and Acceleration
• Mass Moment of Inertia
• Planar Kinetic Equation of Motion
• Equation of Motion: Translation
• Equation of Motion: Rotation
• Equation of Motion: General Plane Motion

CH18- Planar Kinetics of a Rigid Body: Work and Energy
• Kinetic Energy
• The Work of a Force
• Principle of Work and Energy
• Conservation of Energy

CH19- Planar Kinetics of a Rigid Body: Impulse and Momentum
• Linear and Angular Momentum
• Principle of Impulse and Momentum
• Conservation of Momentum
• Eccentric Impact

Course web pages:
Section 03: websitem.gazi.edu.tr/balyavuz/
Section 04: w3.gazi.edu.tr/~ksoyluk