

**Mechanics for Materials Engineers SCME 295(3 credit)**Academic Year **2024 Term 1****Class Schedule:** Fri (13:30-16:30 pm)**Room:** SC2-158, SC1-156, L2-002 (Please see details in schedule)**Coordinator:** Dr. Kittitat Subannajui (email: kittitat.sub@mahidol.ac.th)

Office SC1-201, Salaya Phone: 0890888204

**Instructors:**

Asst. Prof. Dr. Jetsadaporn Priyadumkol (email: jetsadaporn.pri@mahidol.ac.th)

Assoc. Prof. Dr. Kittitat Subannajui (email: kittitat.sub@mahidol.ac.th)

Office: Salaya campus (by appointment), Phone: 0890888204

**Course Description:** Force vectors, equilibrium of rigid body, stress and strain relationship, moment, torsion, and bulking; Mohr's circle, basic continuum mechanics, yield point and stress; basic mechanics in advanced materials.**Grading Policy:** Course assessment will be based on the following:*Attendance and class concentration: 10%*

Students must attend all classes for full marks, and 80% of classes overall to pass. Late (&gt; 10 min) will be recorded as absence.

*Examination 90%*The final grade given will be based on letter scale (A, B<sup>+</sup>, B, C<sup>+</sup>, C, D<sup>+</sup>, D, F).**Reference Material****Textbooks****R.C. Hibbeler, Engineering Mechanics: Statics & Dynamics (12th Edition), Pearson Education****J.L. Meriam & L.G. Kraige, Engineering Mechanics: Statics, John Wiley & Sons****F.P. Beer & E.R. Johnston, Vector Mechanics for Engineers: STATICS, McGraw Hill**

**Class Schedule**

<b>Week</b>	<b>Classroom</b>	<b>Topic/Description</b>	<b>No. of Hrs.</b>	<b>Teaching Activity</b>	<b>Instructor</b>
Fri 09/08	SC1-156	General principles + Force Vectors (1)	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Fri 16/08	SC1-156	Force Vectors (2)	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Tue 20/08	SC2-158	Equilibrium of a Particle 2D/3D	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Tue 27/08	SC2-158	Force System Resultants moment couple resultant	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Tue 03/09	L2-002	Equilibrium of a Rigid Body (1) - 2D	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Tue 10/09	SC2-158	Equilibrium of a Rigid Body (2) -3D	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Tue 17/09	SC2-158	Centroid/Area moment of inertia	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
Tue 24/09	SC2-158	Planar Kinetics of Rigid Bodies: Force-Mass Acceleration method	3	Lecture with PowerPoint/Quiz	Jetsadaporn Priyadumkol
<b>Midterm Exam Week</b>					

Week	Classroom	Topic/Description	No. of Hrs.	Teaching Activity	Instructor
Fri 04/10	SC1-156	Vectors, Velocity, Force, Stress and Strain relation in materials science perspective	3	Lecture with PowerPoint/Quiz	Tanant Waritanant
Fri 11/10	SC1-156	Energy conservation and force in materials, Types of structural materials and mechanical properties of each material, beam, wire, and other structural materials.	3	Lecture with PowerPoint/Quiz	Tanant Waritanant
Fri 18/10	SC1-156	Axial Load, Torsion, Bending, Transverse Shear, Combined load on a material	3	Lecture with PowerPoint/Quiz	Tanant Waritanant
Fri 01/11	SC1-156	Mechanics of Metal, Ceramics, Polymer	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
Fri 08/11	SC1-156	Continuum mechanics	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
Fri 15/11	SC1-156	The principle behind physics and chemistry that influence the mechanical properties of materials	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
Fri 22/11	SC1-156	Simulation and design in mechanics of materials	3	Lecture with PowerPoint/Quiz	Kittitat Subannajui
		<b>Final Exam week</b>			