# SEEM1113 ENGINEERING MECHANICS



## CH0 Introduction

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- 1. Attendance is compulsory. You must attend 80% of lecture hours to be eligible to attend final exam.
- 2. You are responsible for whatever is taught in lecture. If you miss a class, it is your responsibility to find out about assignments, quizzes and exams.
- 3. Punctuality is expected.
- 4. Makeup tests will not be given except in the case of actual emergencies with written evidence.
- 5. You are encouraged to collaborate (not copy) on assignment problems with your "study buddies."





### **SECTION 6**

- Monday (10.00 am to 11.00 am)
- Thursday (11.00 am to 1.00 pm)





CO1 : Describe clearly physical laws and principles related to static and dynamic particles

CO2 : Solve critically problems in mechanics of particles

CO3 : Derive fundamental equations that characterize the kinematics and Newtonian dynamics of particles





**KINETICS OF PARTICLES** 



Week 1	:	General Principle & Force Vectors (9 hours)
Week 2	:	General Principle & Force Vectors (9 hours) cont. Scalar and vectors, Vector operation, Vector addition of forces, Addition of coplanar, Cartesian vectors, Addition of Cartesian vectors
Week 3	:	General Principle & Force Vectors (9 hours) cont.
		Position vectors, Force vector along a line, Dot product
Week 4	:	Equilibrium of a Particle (6 hours)
		Condition for equilibrium, Free-body diagram.
Week 5	:	Equilibrium of a Particle (6 hours) cont.
		Three-dimensional force systems
Week 6	:	Force System Resultants (6 hours)
		Moment of a force, Cross product
Week 7	:	Force System Resultants (6 hours) cont.
		Moment of a force-vector formulation
Week 8	:	Kinematics of Particles (9 hours)
		Rectilinear Kinematics



- Week 9 : MID SEMESTER BREAK
- Week 10 : Kinematics of Particles (9 hours) cont. Curvilinear motion
- Week 11 : Kinematics of Particles (9 hours) cont. Motion of a projectile
- Week 12 : Kinetics of Particles: Force and Acceleration (6 hours) Newton's Law, The equation of motion
- Week 13 : Kinetics of Particles: Force and Acceleration (6 hours) cont. Equation of motion: Rectangular coordinates
- Week 14 : Kinetics of a Particle: Work and Energy (6 hours) The work of force
- Week 15 : Kinetics of a Particle: Work and Energy (6 hours) cont. Principle of work and energy for a system of particles, power and efficiency

Week 16 : REVISION WEEK



#### Hibbeler, R. C. "Engineering Mechanics: Statics and Dynamics 13th Edition" (2013). Prentice-Hall Inc, Upper Saddle River.



Assessment	Mark (%)
Test	15
Quiz 1	4
Quiz 2	4
Quiz 3	4
Quiz 4	4
Quiz 5	4
Group Assignment	15
Final Exam	50
Total	100







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