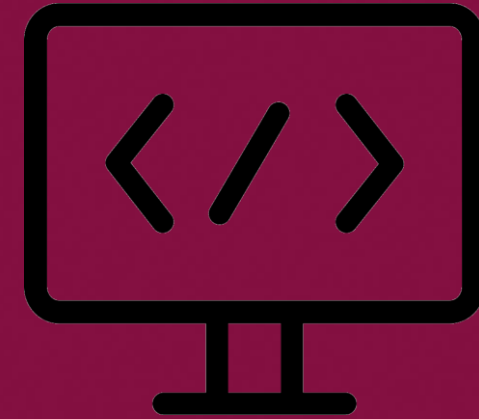


# SEEM1113 ENGINEERING MECHANICS



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

## CH0 Introduction



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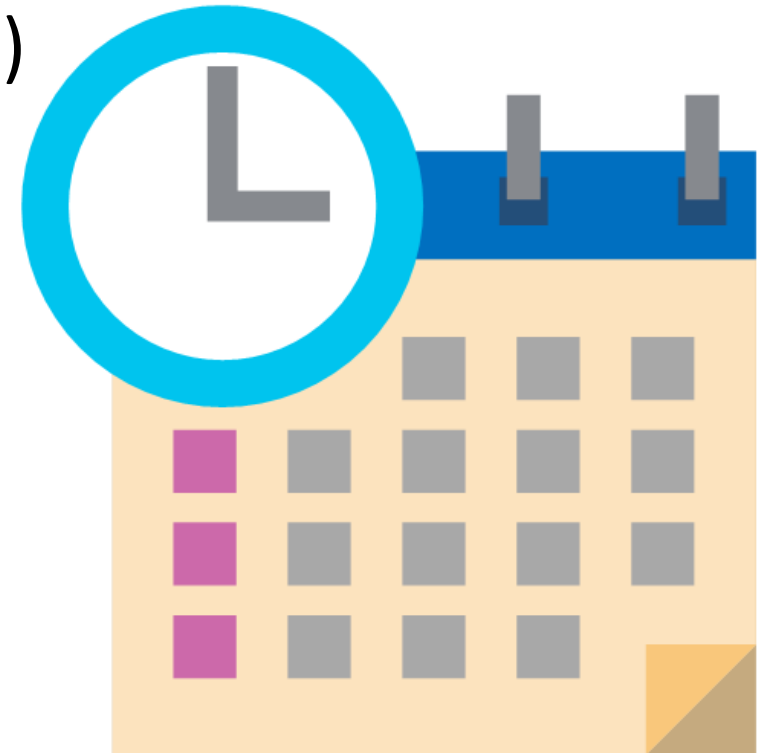
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1. Attendance is compulsory. You must attend 80% of lecture hours to be eligible to attend final exam.
2. You are responsible for whatever is taught in lecture. If you miss a class, it is your responsibility to find out about assignments, quizzes and 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)

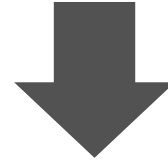


CO1 : Describe clearly physical laws and principles related to static and dynamic particles

CO2 : Solve critically problems in mechanics of particles

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

GENERAL PRINCIPLES/INTRODUCTION



**STATICS**

**FORCE VECTORS**

**EQUILIBRIUM OF PARTICLES**

**FORCE SYSTEM RESULTANTS**



**DYNAMICS**

**KINEMATICS OF PARTICLES**

**KINETICS OF PARTICLES**

**Week 1 : General Principle & Force Vectors (9 hours)**

Introduction to Engineering Mechanics, Fundamental concepts, Units of measurement

**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
<b>Total</b>	<b>100</b>





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Thank You

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