

淡江大學 95 學年度第 1 學期課程教學計畫表(格式二)

壹、科目名稱：普通物理

貳、授課老師：陳惟堯

參、開課系所班級：土木工程系

肆、必選修：必修

伍、學分數：3

陸、先修科目：

柒、教學內容及進度：

Measurement: The international system of units, charge units, length, time, mass.

Vector: Vectors and scalar, adding vectors geometrically, components of vectors, vectors and the laws of physics, multiplying vectors.

Force and motion: Motion in two and three dimensions, Newton's first, second, and third laws, friction, the drag force and terminal speed, uniform circular motion

Kinetic energy and work: Energy, work, work and kinetic energy, work done by a gravitational force, spring force and variable force, power.

Potential energy and conservation of energy: Potential energy, conservation of mechanical energy, work done on a system by an external force, conservation of energy.

System of particles: The center of mass, Newton's second law of a system of particles, linear momentum, conservation of linear momentum, systems with varying mass-rocket.

Collision : Impulse and linear momentum, momentum and kinetic energy in collisions, inelastic collisions, elastic collisions.

Rotation : Translation and rotation, rotation with constant angular acceleration, kinetic energy of rotation, calculation the rotational inertia, torque, Newton's second law for rotation.

Rolling, torque, and angular momentum: The kinetic energy of rolling, the force of rolling, Newton's second law in angular form, the angular momentum of a rigid body rotating about a fixed axis, conservation of angular momentum.

Gravitation: The world and the gravitational force, Newton's law of gravitation, gravitation near and inside the Earth, gravitational potential energy, potential and satellites-Kepler's laws, satellites-orbits and energy, Einstein and gravitation.

Oscillations: Oscillations, simple harmonic motion, the force law and energy in simple harmonic motion, pendulums, simple harmonic and uniform circular motions, damped simple harmonic motion, forced oscillations and resonance.

捌、授課方式：講授, 討論

玖、教學設備：

拾、教材課本：Fundamentals of Physics (7th Edition), David Halliday, Robert Resnick,
Jearl Walker

拾壹、參考書籍：Fundamental University Physics, Alonso-Finn

拾貳、成績考核方式：

	平時成績：	20	%
	期中考成績：	40	%
	期末考成績：	40	%
	讀書報告：		%
	其他 (_____)：		%

拾參、備考：

1. 本表格式請參考使用，教學計畫表格有兩種，授課教師可至教務處網頁各項表單中取得，任擇一種使用。
2. 自製格式請具備上述項目。
3. 教學計畫表上傳步驟：請從教務處網頁依「教學計畫表上傳」指示進入。