開課班級: 四車輛二B **授課老師: 陳勇全** **學分數: 3**

課程大綱:

本課程主要目的是指導本系二年級生學習有關工程力學的基本理論與實際的工程應用，本課程為銜接靜力學的後續課程。其課程內容分為：質點運動學、質點動力學(功與能、衝量與動量)、平面剛體運動學以及平面剛體動力學等。

outline:

The objective of this course is to instruct the sophomore students the fundamental theory and practical application in engineering mechanics. It is the extension course of statics that helps students to solve and analysis the problems of dynamics by using the principles they were already familiar in the statics. The course includes kinematics of particle, kinetics of a particle (work and energy, impulse and momentum), planar kinematics of a rigid body, and planar kinetics of a rigid body.

教學型態:

課堂教學

成績考核方式:

平時成績:50%
期中考:25%
期末考:25%
其它:%

本科目教學目標:

培養具備社會責任感、敬業態度與國際視野之車輛相關產業優秀技術工程人才。

參考書目:

Engineering Mechanics Dynamics (R. C. Hibbeler) Fourteenth Edition in SI Units

課程進度表：

週次	起訖月日	授課單元(內容)	備註
第1週	9.08~9.15	Introduction, kinematics and kinetics	8日正式上課。8~12日課程加退選，轉學(系)生、復學生及延修生選課，雙主修、輔系申請，12日申辦抵免學分截止日
第2週	9.15~9.22	Kinematics of a particle ;	
第3週	9.22~9.29	Kinematics of a particle Curvilinear motion: normal and tangential components, cylindrical components	28日(日)孔子誕辰紀念日/教師節(放假),29日(一)補假
第4週	9.29~10.06	Kinematics of a particle: Force and Acceleration Equations of motion: rectangular coordinate, normal and tangential coordinates	29日成績優異提前畢業者提出申請截止日
第5週	10.06~10.13	Kinematics of a particle: Force and Acceleration Equations of motion: cylindrical coordinates	6日(一)中秋節(放假)，10日(五)國慶日(放假)
第6週	10.13~10.20	Kinetics of a particle: Work and Energy The work of a force, principle of work and energy, power and efficiency	14日學生宿舍安全輔導暨複合式防災疏散演練。18日多益測驗
第7週	10.20~10.27	Kinetics of a particle: Work and Energy Conservative forces and potential energy, conservation of energy	24日(五)補假，25日(六)光復暨古寧頭大捷日(放假)。
第8週	10.27~11.03	Kinetics of a particle: Impulse and Momentum Principle of linear impulse and momentum, conservation of linear momentum	30日校課程委員會
第9週	11.03~11.10	期中考	3~9日期中考試
第10週	11.10~11.17	Kinetics of a particle: Impulse and Momentum Impact, angular momentum, angular impulse and momentum	13日教務會議,16日教師期中成績上網登錄截止日
第11週	11.17~11.24	Planar kinematics of a rigid body Rigid-body motion, translation, rotation about a fixed axis, absolute motion analysis	
第12週	11.24~12.01	Planar kinematics of a rigid body Relative-motion analysis, instantaneous center of zero velocity	24~28體育運動週。24日校園路跑。27日運動大會夜間開幕，28日運動大會活動，29日101週年校慶活動日，照常上班
第13週	12.01~12.08	Planar kinematics of a rigid body: force and acceleration Moment of inertia, planar kinetic equation of motion translation	
第14週	12.08~12.15	Planar kinematics of a rigid body: work and energy rotation about a fixed axis	12日申請停修課程截止日
第15週	12.15~12.22	Planar kinematics of a rigid body: work and	

		energy general plane motion	
第16週	12.22~12.29	Planar kinematics of a rigid body : impulse and momentum Kinetic energy, work, principle of work and energy	22日校務會議。25日行憲紀念日(放假)
第17週	12.29~1.05	Planar kinematics of a rigid body: work and energy conservation of energy	1日(四)開國紀念日(放假)
第18週	1.05~1.12	期末考	5~11日期末考試，10~11日學生退宿