

EN40 Review: Mechanical Major (interim map) showing Dynamics 'Unit Stream'

Unit	Grad Caps	CLO	Level I-D-A	Unit Learning Outcomes (ULO)	Assessment	L&T Activities
ENB211 Dynamics	A B C E	1- tpa 2-pa 3-p 5-p	D D / I	<ol style="list-style-type: none"> Use fundamentals principles of kinematics and kinetics in formulating and solving dynamics problems for particles, rigid bodies and mechanical vibrations Analyse basic mechanical components & mechanisms. 	Lab/Pracs using sw 20% Problem solving 20% Final exam 60%	Lectures-core concepts, real systems/examples Interactive tutorials- real problems, Lab: teamwork with simulation s/w
ENB312 Dynamics Machines	A B C E	1- tpa 2 3 5-pa	D D D D	<ol style="list-style-type: none"> Extend the principles of kinematics & kinetics to solving problems of machine components. Apply analytical techniques to solving mechanical problems Use equations of motions and discrete methods to solve multiple degrees of freedom vibration problems Contribute effectively as a team member to group projects/reports on vibration machine 	Group Project written report 25% Lab Prac 25% Final exam 50%	Teamwork extended to group assessed project/report, Real and simulated (lab) project and problem solving task
ENB301 Instrum & Control	A B C E	1- tpa 2-pa 3-pa 5-p	D D D ?	<ol style="list-style-type: none"> Use measurement devices and programmable logic controllers appropriately. Model mechanical and electrical systems using discrete events and transfer functions, linear time-invariant systems, open & closed loop control, and block diagrams. Assess the stability of linear time invariant systems. Design analogue controllers, proportional integral derivatives, lead & lag controllers. Apply linearization techniques to the estimation of transfer functions 	Lab Prac 20% Problem solving 20% Final exam 60%	Lectures; Tuts: problem solving/ videos, design exercises, Labs: s/w tools for graphicacy practice (sml gps)

Unit Learning outcomes in relation to overall Course/Stream outcome

A/1 Knowledge and skills pertinent to a particular discipline or professional area

E/5 The ability to work independently and collaboratively

B/2 Critical, creative & analytical thinking, and effective problem-solving

F/6 Social & ethical responsibility & an understanding of indigenous & intern. perspectives

C/3 Effective communication in a variety of contexts and modes

D/4 The capacity for life-long learning G Characteristics of self-reliance & leadership

Introductory/Developmental/Advanced – level of Bloom's Taxonomy/SOLO learning outcomes and disciplinary depth