

# ANAL C4F01: Dynamics Vibration Control

Module Title	):		Dynamics Vibration Control
Language o	f Instructio	n:	English
Credits:		5	
		0	
NFQ Level:		0	
Module Deli	vered In		2 programme(s)
Module Aim	:		To provide the student with a specialised knowledge of the vibration of mechanical systems
Learning Ou	itcomes		
On successfi	ul completio	n of th	his module the learner should be able to:
LO1	Derive and freedom.	d appl	y formulae to solve design problems involving the vibration of a mechanical system with one degree of
LO2	Derive and freedom.	d appl	y formulae to solve design problems involving the vibration of a mechanical system with two degrees of
LO3	Derive and	d appl	y formulae to limit vibration by the design of a vibration absorber.
LO4	Quantify b	y calc	sulation and simulation the characteristic response of mechanical systems subject to vibration.
Pre-requisit	e learning		
Module Rec This is prior l	ommendati earning (or	i <b>ons</b> a prac	ctical skill) that is recommended before enrolment in this module.
No recomme	ndations list	ted	
Incompatibl These are m	e Modules odules whic	h hav	e learning outcomes that are too similar to the learning outcomes of this module.
No incompat	ible module:	s liste	d
Co-requisite	Modules		
No Co-requis	site modules	listed	1
<b>Requiremen</b> This is prior l	ts earning (or	a prac	ctical skill) that is mandatory before enrolment in this module is allowed.
No requireme	ents listed		



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### **Module Content & Assessment**

### Indicative Content

#### Vibrating Systems with one degree of freedom:

Free vibration of damped spring-mass systems; Forced vibration of damped spring-mass systems; - excitation by harmonic force of constant amplitude; - excitation by rotating unbalance; - excitation by harmonic support vibration; - transmissibility of system; Vibration isolation; whirling of shafts; Vibration measurement.

Vibrating Systems with two degrees of freedom: Normal mode of vibration; Undamped free vibration of two degree of freedom systems; Undamped forced vibration of two degree of freedom systems; Torsional vibration with two degrees of freedom; Vibration Absorbers.

Assessment Breakdown	%
Continuous Assessment	90.00%
Practical	10.00%

Continuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	Class Test	1	40.00	Week 8
Examination	Class Test	2,3	40.00	Week 12
Practical/Skills Evaluation	Lab: Whirling of shafts, Vibrating Beam.	1,4	10.00	Ongoing

#### No Project

Practical				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Computing Competencies Assignment	1,4	10.00	n/a

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



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### Module Workload

Workload: Full Time		
Workload Type	Frequency	Average Weekly Learner Workload
Lecture	12 Weeks per Stage	4.00
Laboratory	12 Weeks per Stage	1.00
Independent Learning	15 Weeks per Stage	4.33
	Total Hours	125.00

Module Delivered In			
Programme Code	Programme	Semester	Delivery
CW_EFARG_B	Bachelor of Engineering (Honours) in Agricultural Systems Engineering	8	Mandatory
CW_EMMEC_B	Bachelor of Engineering (Honours) in Mechanical Engineering	8	Mandatory