a) General			
School	ENGINEERING		
Academic unit	MECHANICAL ENGINEERING		
Level of studies	Undergraduate		
Course code	MM208Y03	*Semester*	8
Course title	**Vibrations - Machine dynamics**		

Independent teaching activities	*Weekly teaching hours*	*ECTS*
Lectures	3	6.0
Laboratory exercises	2	

Course type	Knowledge deepening/consolidation
Course category	Compulsory for Direction 2
Prerequisite courses	-
Language of instruction and examinations	Greek
Is the course offered to Erasmus students	No
Course website (url)	https://eclass.uniwa.gr/courses/MECH161/

b) Learning outcomes and general competences

b1. Learning outcomes

Upon completion of the course, students will be able to:
- Study the Kinetics fundamentals
- Recognizes the normal mechanical dynamic systems.
- Understand the structure.
- To analyze and dynamic modeling mechanical systems.
- Modeling dynamic mechanical devices with elements of concentrated properties.
- Evaluates and improves dynamic systems.
- Have introductory knowledge in Mechanical Vibrations

b2. General competences

- Search, Analysis and Synthesis of data and information with the use of new technologies
- Decision Making
- Teamwork
- Production of new research ideas Production of free, creative and inductive thinking
- Others

c) Syllabus

Introduction, Kinetics of absolutely solid body, Dynamic system with one degree of freedom, Dynamic system with multiple degrees of freedom, Mechanical Vibrations, Mathematical modeling of dynamic systems, Applications of Machine dynamics

d) Teaching and learning methods - Evaluation

Delivery	Face-to-face	
Use of information and communications technology	- Commercial/free/open source software - Multimedia applications - MS Teams/Moodle/eclass - Open courses	
Teaching methods	*Activity*	*Semester workload*
	Lectures	39
	Tutorials	0

	Laboratory exercises	26
	Computational exercises	0
	Individual work	91
	Course total	156
Student performance evaluation	Written examination: 70% Group project 30%	

e) Suggested bibliography

1. Κανάραχος, Α.Ε., Αντωνιάδης, Ι. (1998). *Δυναμική Μηχανών*. Αθήνα: Εκδ. Παπασωτηρίου.
2. Νατσιάβας, Σ.(2001).Ταλαντώσεις Μηχανικών Συστημάτων.
3. Beer, F.P., Johnston, E.R., Cornwell, P.J.(2013). *Ταλαντώσεις και Δυναμική Μηχανών*. Εκδ. Τζιόλα.
4. Μπουζάκης, Κ. (2011). *Ταλαντώσεις και Δυναμική Μηχανών*. Θεσσαλονίκη: Εκδ. Ζήτη.
5. Νατσιάβας, Σ. (1999). *Εφαρμοσμένη Δυναμική*. Θεσσαλονίκη: Εκδ. Ζήτη.