

## APPLIED MECHANICS: DYNAMICS

Code du cours Course Code			Titre du cours Course title					
BAC.EAINA.OTMAE. 2082			<b>APPLIED MECHANICS: DYNAMICS</b>					
Crédits Credits			Période d'enseignement Teaching period			Année Académique Academic Year		
6			spring			2022/2023		
Charge de travail Student workload	Synchrone / Synchronous	Asynchrone / Asynchronous	Travail en équipe Team work	Activités pédagogiques / Pedagogical activities	Travail personnel Personal work	Coaching	Evaluation	Charge totale de travail Total workload
	39	0	0	0	0	0	6	45
Programme Program			Global BBA					
Discipline Discipline			ZZ TEST DISCIPLINE TEST					
Module			-					
Type de cours Course type			core					
Campus			Sophia					
Campus partenaire								
Course open to students in exchange								
Langue d'enseignement Teaching language			Anglais / English					
Responsable du cours Course leader			GRASSELLI Yan					
Pré-Requis Prerequisite			Applied Mechanics: Statics					
Nom des intervenants par campus Instructor(s) names by campus	Belo Horizonte							
	Lille							
	Paris							
	Raleigh							
	Sophia							
	Stellenbosch- Le Cap							
	Suzhou							
	Nanjing							

	Barcelone			
	Other			

<b>Descriptif du cours / Course description</b>	This course is designed to give the student an understanding of the principles and methods of dynamics and to develop in him / her the ability to analyze engineering problems, involving kinematics, kinetics of particles and rigid bodies, in a systematic manner.		
<b>Thèmes / Topics</b>			
<b>Résultats d'apprentissage / Intended Learning Outcomes and Skills</b>	<p><b>A l'issue de la formation, vous serez capable de / As a result of this module, you will be able to:</b></p> <p><b>Connaissances / Knowledge and Understanding (subject specific)</b> be able to analyse complex mechanical situations</p> <p><b>Aptitudes cognitives / Cognitive skills</b> learn calculation techniques to be applied in any mechanical problems ranging from kinematics up to mechanical vibrations</p> <p><b>Attitudes / Key transferable skills</b> be able to apply the presented calculations techniques in any dynamical situations</p> <p><b>Ethical and social understanding</b></p>		
<b>Contribution aux objectifs pédagogiques du programme / Contribution to learning objectives</b>	Indiquer les learning objectives auxquels contribue le cours (en se basant sur le curriculum mapping du programme) / Indicate which learning objectives the course contributes to (based on the program curriculum mapping)		
<b>Contribution to learning objectives</b>	Cours soumis à évaluation dans le cadre de l'Assurance of Learning pour l'année en cours ? Non / No		
<b>Evaluation des étudiants / Student Assessment</b>	<b>Evaluation finale (DS) / Final examination</b> 40% (Précisez la nature pour l'évaluation finale / Explain type for final examination)		
<b>Evaluation des étudiants / Student Assessment</b>	Cliquez ici pour entrer du texte. QCM - Quiz: Epreuve sur table - Supervised exam: Présentation orale - Presentation: Rapport écrit/Dissertation - Report / Dissertation: Participation - Class participation: <b>Autre, précisez / Other, precise:</b>		

	<b>Contrôle continu</b> <b>Continuous Assessment</b>		<b>60%</b>
	préciser nature / Explain type		
	Cliquez ici pour entrer du texte. QCM - Quiz: Epreuve sur table - Supervised exam: Présentation orale - Presentation: Rapport écrit/Dissertation - Report / Dissertation: Participation - Class participation:  <b>Autre, précisez / Other, precise:</b>		Nb midterms : 2
<b>Méthodes d'enseignement Teaching Methods</b>	<b>Format de cours / Course format</b>		
	Cours magistral / Lecture - TD / Tutorials		
	<b>Autre, précisez / Other, precise:</b>		
	<b>Activités d'apprentissage / Learning activities</b>		
	Personal guided study		
<b>Plan de cours Course Plan</b>	Chapter 11 Kinematics of particles		
	Chapter12 Kinetics of particles: Newton's second law		
	Chapter 13 Kinetics of particles: energy and momentum methods		
	Tutorial session 1 (chapters 11 to 13)		
	Quiz 1 (11-13) Chapter 14 Systems of particles		
	Spring Break		
	Chapter 14 - Systems of particles Chapter 15 - Kinematics of rigid bodies		
	Midterm 1 (chapters 11 to 13) room 527		
	Chapter 15 - Kinematics of rigid bodies		
	Chapter 16 Plane Motion of rigid bodies: forces and accelerations		
Tutorial session 2 (chapters 14 to 16)			
Quiz 2 (chapters 14 to 16)			

	<p>Chapter 17 Plane Motion of rigid bodies: energy and momentum methods</p> <p>Holidays</p> <p>Midterm 2 (chapters 14 to 16) room 624</p> <p>Chapter 17 - Plane Motion of rigid bodies: energy and momentum methods Chapter 19 Mechanical vibrations</p> <p>Chapter 19 Mechanical vibrations</p> <p>Tutorial session 3 (chapters 17 to 19)</p> <p>Final Exam (To be announced)</p>
<b>Référence Académique / Academic reference</b>	
<b>Site(s) web / Web site(s)</b>	
<b>Licence(s) informatique(s)/ Computer licenses</b>	

Modalités de délivrance du cours (par campus si différent) Course delivery modes (per campus if different)						
Nombre CM Amphi / Number of Lectures	Durée CM Amphi (en heures) / Lecture duration (in hours)	Nombre TD / Number of Tutorial classes	Durée TD (en heures) / Tutorial class duration (in hours)	Asynchrone / Asynchronous	Autres (Distance learning, etc...) (en heures) / Other (in hours)	Préciser les spécificités de programmation (TD journée, cadencement spécifique des séances) / Specify if full-day tutorial class, different schedules
Campus Sophia						
0	0	13	3	0	0	