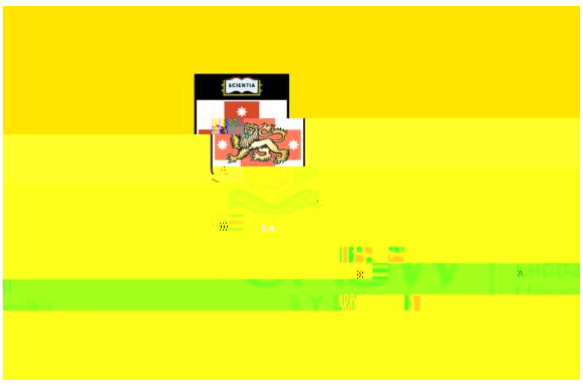

CVEN9840 Structural Health Monitoring Fundamentals

COURSE DETAILS

Units of Credit	6
Contact hours	4 hours per week
Class and Workshop	Friday 12:00 16:00 online

Course Coordinator and Lecturer	Dr. Mehrisadat Makki Alamdari email: m.makkialamdari@unsw.edu.au office: Civil Engineering Building (H20), Level 7, Room CE714

INFORMATION ABOUT THE COURSE

Structural health monitoring (SHM) refers to the process of design and implementing a condition monitoring and characterization strategy for engineering structures. Needs for optimization of maintenance costs, objective and science-based inspection practices, increase of safety, emergence of new and improved construction materials and methods, new developments in m

COURSE PROGRAM

Term 3 2020

Date	Topic
18/09/2020 (Week 1)	**Structural Health Monitoring (SHM) Background and Motivation**
25/09/2020 (Week 2)	**Measurement and Sensing**
02/10/2020 (Week 3)	**Structural Dynamics Single Degree of Freedom (SDOF)**
9/10/2020 (Week 4)	

ASSESSMENT

ASSESSMENT OVERVIEW

Item	Length	Weighting	Learning outcomes assessed	Assessment Criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
1. Assignment 1	Homework	10%	*PE1.1-1.6, PE2.1-2.4, PE3.2-3.5*	*See assignment question uploaded on Moodle*	*2 October 2020*	*9 October 2020*	*9 October 2020*

RELEVANT RESOURCES

Farrar, C.R. and Worden, K., 2012. *Structural health monitoring: a machine learning perspective*. John Wiley & Sons.

Chen, H.P. and Ni, Y.Q., 2018. Structural health monitoring of large civil engineering structures. Hoboken, NJ: Wiley Blackwell.

Placko, D. ed., 2013. *Fundamentals of instrumentation and measurement*. John Wiley & Sons.

Morris, A.S. and Langari, R., 2012. *Measurement and instrumentation: theory and application*. Academic Press.

Géradin, M. and Rixen, D.J., 2014. *Mechanical vibrations: theory and application to structural dynamics*. John Wiley & Sons.

Chopra, A.K., 2017. Dynamics of structures. theory and applications to. *Earthquake Engineering*.

Graham, K.S., 2000. Fundamentals of Mechanical Vibrations.

Appendix A: Engineers Australia (EA) Competencies

Stage 1 Competencies for Professional Engineers

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice
PE2:	