



# American University of Armenia

## College of Engineering

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### Introduction to Performance-Based Earthquake Engineering

**Presentation By  
Marco Broccardo**

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Performance-based earthquake engineering (PBEE) aims to improve the seismic design process and the decision making strategies for civil facilities, employing realistic models that account for uncertainties embodied in the process.

PBEE is based on the idea that the performance of a civil infrastructure, under a broad range of hazards, can be predicted with sufficient confidence. This information is fundamental to addressing rational strategies in a decision making process that has the objective of minimizing both risk and life-cycle costs.

The general framework can be summarized in the following main points:

- a) Characterization and assessment of the seismic hazard
- b) Probabilistic assessment of the seismic demand on the structure and assessment of the resulting damage
- d) Assessment of expected economic and other losses resulting from damage.

Mayssa Dabaghi discussed the first point in the previous presentation. In this talk, first we will focus on a general overview on the PBEE framework and then we will concentrate on the second point and briefly describe methods that are being development at UC Berkeley.

***Speaker:***

Marco Broccardo obtained his Bachelor-Master Degree (Laurea, summa cum laude) in Structural Engineering from the University of Padova, Italy. During his Master he studied one year at the University of California San Diego where he worked on his master thesis under the guide of Professor P. Krysl and Professor C. Majorana. In 2009 he was admitted as PhD student at the University of California Berkeley, where he is currently working with Professor A. Der Kiureghian. His research focuses on nonlinear stochastic dynamic analysis.

**Date:** Thursday, July 21, 2011  
**Time:** 16:00  
**Place:** 308-E PAB, AUA

*The seminar is open to the public*