ADVANCED DYNAMICS OF STRUCTURES 2014 Fall Semester Wednesdays 9:30-12:20
Prof.Dr. Kadir Güler (http://akademi.itu.edu.tr/kguler/; kguler@itu.edu.tr)
Prof.Dr. Zekai Celep (http://web.itu.edu.tr/celep/; celep@itu.edu.tr) A1
Doç.Dr. Necmettin Gündüz (http://akademi.itu.edu.tr/gunduzan/; gunduzan@itu.edu.tr) A204
Y.Doç.Dr. Ufuk Yazgan(http://sites.google.com/site/ufukyazgan/; ufukyazgan@itu.edu.tr) Deprem Enst.
Y.Doç.Dr. İhsan Engin Bal (http://web.itu.edu.tr/~iebal/Dr_Ihsan_Engin_BAL/Home.html; iebal@itu.edu.tr)

1	*10 September*	*Characteristics of dynamic problem, method of discretizations, single degree-of freedom systems, undamped free vibrations*	
2	*17 September*	*Vibration of rigid assemblages having one degree-of-freedom, damped free vibrations, critically damped systems*	
3	*24 September*	*Under critically damped systems, harmonic and periodic excitation Response to impulsive loading*	
4	*01 October*	*Response to general loading, response to periodic loading, Rayleigh's method*	
5	*08 October*	*Multi degree-of-freedom systems, undamped free vibration, mode shapes*	
6	*15 October*	*Forced vibrations, modal superposition, modal superposition*	*Quiz 11.30-12.30*
7	*22 October*	*Rayleigh method Stodola method, static condensation*	
8	*29 October*	Cumhuriyet bayramı	
9	*05 November*	*Center of rigidity, damping matrix*	
10	*12 November*	*Distributed-parameter-systems, bending vibrations*	
11	*19 November*	*Shear vibrations, longitudinal vibrations*	
12	*26 November*	*Earthquake motions, single degree-of-freedom-systems, spectra*	*Midterm 10.30-12.30*
13	*03 December*	*Multi degree-freedom-systems*	
14	*10 December*	*Method of modal superpositions*	

Final grade = 10 % Quiz + 30 % Midterm exam + 10 % Homework + 50 % Final exam

Requirements: Homework 100 % + Attendance 70 %

References

1. *R.W. Clough, J. Penzien; Dynamics of Structures, McGraw-Hill, 1993.*
2. *A. K. Chopra; Dynamics of Structures, Prentice Hall, 2011.*
3. *R. R. Craig; Structural Dynamics, John Wiley & Sons, 1981.*
4. *J.M. Biggs; Structural Dynamics, Mc Graw-Hill, 1964.*
5. *G.C. Hart, K. Wong, Structural dynamics for structural engineers, John Wiley, 1999.*
6. *W.C. Hurty, M.F. Rubinstein; Dynamics of Structures, Prentice-Hall, 1967.*
7. *F.E. Richart, J.R. Hall, R.D. Woods; Vibrations of Solids and foundations, Prentice-Hall, 1970.*
8. *Z. Celep; Yapı Dinamiği, Beta Dağıtım, 2014.*
9. *Z. Celep, N. Kumbasar; Deprem Mühendisliğine Giriş, Beta Dağıtım, 2004.*
10. *Z. Celep; Betonarme Taşıyıcı Sistemlerde Doğrusal Olmayan Davranış ve Çözümleme, Beta Dağıtım, 2014.*

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