



FALL 2018 - ENSOFT SHORT COURSE

Design of Deep Foundations: Drilled Shafts and Piles Under Lateral and Axial Loading

A Seminar and Workshop Featuring Computer Programs from Ensoft, Inc.

November 13-15, 2018

LOCATION & RESERVATIONS

Ensoft, Inc. – Office Building

3003 West Howard Lane, Austin, Texas 78728
Tel. (512) 244-6464, Fax (512) 244-6067

Sample Hotel Information:

Courtyard by Marriott, Tel. (512) 502-8100
9409 Stonelake Blvd, Austin, TX 78759

Hampton Inn (Northwest), Tel. (512) 349-9898
3908 W. Braker Lane, Austin, TX 78759

La Quinta Inn & Suites, Tel. (512) 832-2121
11901 N Mopac Expy, Austin, TX 78759

(These hotels are within 5-10 minutes driving distance from the training facility)

SPEAKERS

William M. Isenhower, Ph.D., P.E.

Consultant for LPILE, Ensoft, Inc. Dr. Isenhower is a registered professional engineer in the States of Texas and Louisiana, with over 40 years of experience in civil engineering, with an emphasis on geotechnical engineering. His experience has been in consulting, government service, university teaching, and contract research. He has been engaged in consulting projects, site investigations, foundation analysis and design, slope stability analysis and design, and retaining structure analysis and design. Dr. Isenhower has served as an Expert on Mission for the United Nations Development Program and has served as an independent technical reviewer for the US Army Corps of Engineers. He has authored over 30 technical papers and reports, and has presented invited lectures in the United States and abroad. Dr. Isenhower is a member of the Academy of Distinguished Graduates of the Department of Civil, Architectural, and Environmental Engineering of the University of Texas at Austin.

REGISTRATION & FEES

<i>Single Registration</i> ^{(1)(*)}	Early Rates	Std. Rates
	(up to Oct. 10)	(after Oct. 10)
One-Day Session.....	\$570	\$690
Two-Day Session	\$820	\$1000
All 3-Day Sessions.....	\$1060	\$1290

<i>Multiple Registrations</i> ^{(1)(2)(*)} <i>(Rates per person)</i>	Early Rates	Std. Rates
	(up to Oct. 10)	(after Oct. 10)
One-Day Session.....	\$530	\$640
Two-Day Session	\$760	\$930
All 3-Day Sessions.....	\$990	\$1200

⁽¹⁾Includes student workbook, lunch, coffee breaks and refreshments.

⁽²⁾Valid for 2 or more registrations from the same company.

^(*)See cancellation policy under General Notes on page 3.

TOTAL..... \$ _____

Name(s): _____

Company: _____

Address: _____

City/ST/Zip: _____

Phone: _____ Fax: _____

E-mail: _____

Please select your method of payment:

Check enclosed Credit card

Name on card: _____

Number: _____ Exp.: _____

Shin-Tower Wang, Ph.D., P.E.

President, Ensoft, Inc., Program Manager for SHAFT, APILE, and PYWALL. Dr. Wang is a registered professional engineer in the States of Texas and Oklahoma, with over 40 years of experience in civil engineering, with an emphasis on geotechnical and structural engineering. He has engaged in numerous consulting projects in soil structure interaction analyses, pile loading tests, deep foundation designs, and numerical analyses. Dr. Wang received M.S. and Ph.D. degrees from The University of Texas at Austin. He has published over 30 technical papers and reports, and has coauthored several computer programs that are currently sold by Ensoft, Inc.

Gonzalo Vasquez, Ph.D., P.E.

Program Manager for LPILE and GROUP, Ensoft, Inc. Dr. Vasquez is a registered engineer in the States of Texas and California, with over 30 years of experience in civil engineering. Dr. Vasquez is an expert in solid structural modeling for nonlinear, three-dimensional stress analysis. Dr. Vasquez received M.S. and Ph.D. degrees from The University of Texas at Austin.

Faryuh Michael Menq, Ph.D.

Program Engineer for Dynamic Tests, Ensoft, Inc. Dr. Menq has been working in the field of dynamic testing in the past 20 years at the University of Texas. He has extensive experience in laboratory resonant column and torsional shear tests, laboratory free-free resonant column tests, Rolling Dynamic Deflectometer (RDD) tests, Stationary Dynamic Deflectometer (SDD) tests, Spectral Analysis of Surface Waves (SASW), impulse-echo tests, cross hole tests, downhole tests, in-situ nonlinear tests, and in-situ liquefaction tests. He has published over 30 technical papers and reports. Dr. Menq received his Ph. D. degree from the University of Texas at Austin.

SPECIAL OFFER

Software products developed by ENSOFT, INC. may be purchased by course attendees at a 20% discount within one month of the Short Course. A bound manual of literature of covered topics is provided for Session 1 and a separate manual is provided for Session 2. Additional short-course manuals may be ordered in advance at \$80 per unit.

For more details or online registration, visit us at www.ensoftinc.com or send email to seminars@ensoftinc.com



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Program

Tue. Nov. 13, 2018 (Full Day)

The first full day has been prepared for expert-level training in the design of single piles or shafts under lateral loads using the LPILE software.

Time	Subject	Speaker
8:00	Arrival, computer setup, software installation	Isenhower
8:15	Course introduction	Isenhower
8:30	Principles of Soil-Structure Interaction. Modern principles for design of foundations, types of loading.	Isenhower
9:30	Theoretical Basis of Lateral Load-Transfer Models and Experimental Validation	Isenhower
<i>10:00 Coffee Break</i>		
10:15	<i>p-y</i> Curves Available in LPILE and GROUP	Isenhower
11:00	Structural Analysis of Piles and Drilled Shafts, Nonlinear Moment-Curvature Behavior of Drilled Shafts and Prestressed Concrete Piles	Isenhower
<i>12:00 Lunch Break</i>		
1:00	Software Training for LPILE (Part 1)	Isenhower
<i>2:45 Coffee Break</i>		
3:00	Software Training for LPILE (Part 2)	Isenhower
4:00	General Question and Answer. Consultation on Problems of Interest	Isenhower

Wed. Nov. 14, 2018 (Full Day)

The second full day adds training in the design of single drilled shafts under axial loads and pile groups under combined loading.

Time	Subject	Speaker
8:00	Practical Considerations for Design of Drilled Shaft Foundations	Isenhower
9:30	Drilled Shafts and Driven Piles Under Axial Loading. Use of <i>t-z</i> and <i>q-w</i> curves	Isenhower
<i>10:00 Coffee Break</i>		
10:15	Software Training with SHAFT	Wang
11:00	Testing of a fully instrumented pile under axial/lateral loading. Inside and outside practical presentations.	Isenhower
<i>12:00 Lunch Break</i>		
1:00	Analysis of Pile Groups Under Axial and Lateral Loading.	Vasquez
<i>2:30 Coffee Break</i>		
2:45	Software Training for GROUP – Basic Input, Visualization of Results	Vasquez
4:00	Software Training for Group – Advanced Input, Interactive Group Modeling	Vasquez
<i>5:00 Ensoft Reception at Office Yard – Full-Scale Lateral Loading of 24-in OD Instrumented Shafts (drinks and light refreshments will be provided)</i>		

For more details or online registration, visit us at www.ensoftinc.com or send email to seminars@ensoftinc.com



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Thu. Nov. 15, 2018 (Full Day)

The final day adds training in the design of single piles under axial loads, NDT, modal analyses and flexible retaining walls.

Time	Subject	Speaker
8:00	Driven Piles Under Axial Loading	Wang
9:30	Software Training for APILE	Wang
10:30	<i>Coffee Break</i>	
10:30	Introduction to Non-Destructive Tests on Drilled Shafts	Menq
11:15	Structural Health Monitoring Using Ambient Vibrations	Menq
12:00	<i>Lunch Break</i>	
1:30	Introduction to the Designs of Flexible Retaining Walls	Wang
2:30	<i>Coffee Break</i>	
2:45	Software Training for PYWALL	Wang
3:30	Method of Analysis of Piles Subjected to Dynamic/Seismic Loadings	Wang/ Vasquez
4:15	General Question and Answer. Consultation on Problems of Interest	All
5:15	<i>End of Short Course</i>	

PDH CREDITS

Attendance of this short course will provide you with up to 19 professional development hours (PDH) that can be applied towards your local P.E. license requirements for renewal. Ensoft provides a signed document for the participation in the professional short course along with the number of hours of training.

GENERAL NOTES

All students will receive a student notebook containing reference and lecture materials, along with USB memory stick of relevant technical materials.

Course attendees are encouraged to bring a laptop computer to the course. Attendees bringing computers to the course will be loaned software to use during the course and will be able to participate in the solution of design exercises. A limited number of computers can be loaned at no cost.

Those attending the short course are also encouraged to bring design problems of interest to them and their employers. Advice on how to set up design computations for the design problem and guidance about preparation of plans and specification will be provided by the instructors.

The number of spaces available in the short course is limited, so registration will be based on a first come-first served basis.

Cancellations made prior to two weeks from the Short Course will be charged half the total fees. Late cancellations are not refundable but payment may be extended to a future short course. Emergency cancellations may be accepted until five days before short course.

Companies wishing to inquire about having the same training course or another advanced training course to be held at their offices may call Ensoft to obtain a cost proposal.

Companies wanting information about the two-day short course on Design and Construction of Drilled Shafts offered by Ensoft may call to obtain a cost proposal.

COURSE BENEFITS

◆ **Learn how to use effective tools and proper numerical models for deep foundations** ◆ **Improve the efficiency of your future foundation designs** ◆ **Keep short course manuals and personal notes as reference for future numerical models and designs of deep foundations** ◆ **Use the limited 20% discount on software upgrades and new purchases for the whole office site of registered attendants to the short course** ◆ **Earn up to 19 PDH credits towards PE renewals for this course** ◆

Call us at 512-244-6464 or visit our web site to register for the short course

For more details or online registration, visit us at www.ensoftinc.com or send email to seminars@ensoftinc.com

CURRENT ENSOFT PRICE LIST & NEW RELEASES

Software Titles:

LPILE 2018	\$1,000
GROUP 2018	\$1,800
SHAFT 2017	\$850
PYWALL 2015	\$850
APILE 2018	\$850
APILE 2018 (Offshore Version)	\$1,250
TZPILE 2014	\$850
StabIPro 2015	\$580
LPA 3.0	\$490
DynaPile 2016	\$1,900
DynaMat 2018	\$1,490
DynaN 3.0	\$2,900
Ensoft Dynamic Suite	\$5,000
GeoMat 2014	\$1,450
UTexas4	\$2,250
Atena (FEM analysis of reinforced concrete)	call
AMPS (3-D Finite Element Analysis)	call

Call for volume, upgrades, and academic pricing
(Prices above are before 20% participation discount)

GROUP 2018

- Introduction of Incremental/PushOver Analysis, ideal for improved convergence and large displacements;
- Use of improved layering correction methods (similar to those in LPILE v2018);
- Foundation stiffness can be generated based on equivalent elastic stiffness (thus generating a symmetric stiffness matrix);
- Improved calculations of load-vs-settlement (similar to those in APILE v2018);
- Variable ground layers that can start at any soil layer and automatic calculation of load-vs-settlement for different pile penetrations.
- Internal usage of system memory has been optimized along with parallel processing so large group models can be analyzed with shorter computational speed;
- An alternative tolerance option has been added to allow convergences for systems with small displacements;
- An option has been added for users to stop computations;

APILE 2018

- Introduction of axial load transfers for batter piles, with APILE accounting appropriate pile length in each soil layer plus overburden effects on inclined piles.
- Ability to specify pile stickup above ground, for effect on elastic deformation of the pile.
- New 3D View feature where users can check modeled system and also visualize results of load transfers on the various soil strata.
- New estimates of friction angles in sand layers from SPT tests based on 2012 FHWA recommendations.
- Added new types of graphs and improved versions of existing graphs.
- A new 3D View has been added to improve visualization of the modeled shaft and soils and for presentation.
- Introduction of "Neutral Plane Analysis" for Downdrag based on latest FHWA recommendations.
- Users can now choose Elevation values in vertical axes instead of depths from top of soil (for applicable charts).
- APILE v2018 allows users to export observed graphics to formatted Excel spreadsheets. Users can thus easily reformat the graphical display for use of different units, titles & presentation.
- Compatibility to Win 10 and new speed buttons and file-management features are also updated.

Books/Publications:

Single Piles and Pile Groups Under Lateral Loading (2nd Ed.) Lymon C. Reese and William F. Van Impe. (CRC Press/ Balkema, 2011, 507pp.)

Hardback.....\$130

Analysis and Design of Shallow and Deep Foundations Lymon C. Reese et al. (Wiley, Nov. 2005, 608pp.)

Hardback.....\$130

LPILE 2018

- Specify any wide flange or AISC section as pile or structural insert using nonlinear or elastic models.
- Allows for analyses of embedded piles with pile head that is below one or more soil layers.
- New ability to turn off soil layering principles for all soils or only for soils of the same type. Useful for research or to study impact of layering on models.
- Confined concrete can now be modeled in drilled shafts using the Mander, Priestley & Park criteria.
- With LPILE v2018 users can export any graphical output to formatted Excel spreadsheets. Users can thus easily reformat the graphical display for use of different units, titles & presentation.
- Models with multiple load cases are analyzed independently & produce results or warnings if one or more load case fails to reach numerical convergence.
- New error & warning codes, plus ability to perform command-line installations.