



FALL 2019 - ENSOFT SHORT COURSE

Soil Structure Interaction Methods for Deep Foundations Using ENSOFT Software Products

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

November 5-7, 2019

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)

REGISTRATION & FEES

<i>Single Registration</i> ^{(1)(*)}	Early Rates	Std. Rates
	(up to Sep. 20)	(after Sep. 20)
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 Sep. 20)	(after Sep. 20)
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.: _____

SPEAKERS

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, various Dynamic Response software 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.

Farnyuh 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.

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.

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. 5, 2019 (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
8:00	Short-Course Introduction & Schedule
8:10	Installation & General Introduction to LPILE
8:30	Basis of Lateral Load-Transfer Curves and Experimental Validation
9:15	Lateral Load-Transfer Models (p - y Curves)
10:15	<i>Coffee Break</i>
10:30	Software Training for LPILE (Part 1 - Basic Analysis of Elastic Piles)
11:30	Software Training for LPILE (Part 2 - Advanced Analysis of Nonlinear Piles)
12:30	<i>Lunch Break</i>
1:30	Software Training for LPILE (Part 3 - Special Modelling Techniques)
2:30	<i>Coffee Break</i>
2:45	Soil Layering with EnCPT & New Interactions with LPILE
3:45	Sample CPT Analyses
4:15	General Question and Answer. Consultation on Problems of Interest.

Wed. Nov. 6, 2019 (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
8:00	Practical Considerations for the Design of Drilled Shaft Foundations
9:15	Drilled Shafts Under Axial Loading. Use of t - z and Q - w curves
10:00	<i>Coffee Break</i>
10:15	Software Training for SHAFT
11:00	Pile Groups Under Axial and Lateral Loading
12:30	<i>Lunch Break</i>
1:30	Software Training for GROUP – Basic Input, Visualization of Results
3:00	<i>Coffee Break</i>
3:15	Software Training for Group – Advanced Input, Interactive Group Modeling
4:00	Ensoft Reception at Office Yard – Load Testing of Piles and Drilled Shafts (<i>drinks and light refreshments will be provided</i>)



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Program

Thu. Nov. 7, 2019 (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
8:00	Driven Piles Under Axial Loading
9:30	Software Training for APILE
10:30	<i>Coffee Break</i>
10:45	Introduction to Non-Destructive Testing on Piles and Drilled Shafts
11:30	Structural Health Monitoring Using Ambient Vibration
12:15	<i>Lunch Break</i>
1:30	Analysis and Design of Flexible Retaining Walls Using PYWALL
2:30	<i>Coffee Break</i>
2:45	Software Training for PYWALL
3:30	Method of Analysis of Piles Subjected to Dynamic/ Seismic Loadings
4:30	General Question and Answer. Consultation on Problems of Interest
5:00	<i>End of Short Course</i>

PDH CREDITS

Attendance of this short course will provide each participant with up to 8 professional development hours (PDH) per day of training 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 total number of hours of training.

GENERAL NOTES

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

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 may 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 (within two weeks) 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.

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 21 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 2019	\$1,000
GROUP 2019	\$1,800
PYWALL 2019	\$850
APILE 2019	\$850
APILE 2019 (Offshore Version)	\$1,250
EnCPT 2019	\$450
SHAFT 2017	\$850
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 2018	\$1,450
UTexas4	\$2,250
Atena (FEM analysis of reinforced concrete)	call

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

PYWALL 2019

- Introduction of nonlinear wall sections with user-defined sections or steel layout;
- Use of improved layering correction methods (similar to those in LPILE v2018);
- New elastic database of sheet piles;
- Option for AASHTO Hinge Method to compare tieback forces with hand calculations;
- Ability to specify cyclic response of internal p - y curves;
- Detailed results of internally-computed active earth pressures for triangular and trapezoidal distributions;
- New option to compute soil pressures based on wall movements using true SSI methods;
- Improved 3D View of model with numerical display of maxima for most results;
- New option to specify soil slope on excavated side;
- Extensive review and addition of examples with comparisons to hand computations on new User's Manual.

GROUP 2019

- Extended specification of soil movements: i) specify soil movements per load case and/or ii) soil movement per specific pile in the group model.
- New nonlinear section model using the Equivalent Elastoplastic Moment Curvature. This is based on technical documentation from CALTRANS to define the formation of plastic hinges in piles analyzed under extreme loading or for push-over analyses. Resulting plots of pushover analyses display marks and legends for the points where the plastic hinges are developed (first and second plastic hinges, when applicable).
- For batter piles in sand layers, the new GROUP program now computes the proper transfer in side resistance for the inclined length plus it adds the additional benefit of normal stress from overburden pressure.
- New features to import: i) soil layering and properties ii) pile section(s) data and iii) import nonlinear flexural stiffness section data from LPILE v2018 or v2019.
- A standard drop-down selection of Carbon Fiber Composite Cable (CFCC) strands is now available for all prestressed pile sections.
- Users can choose to turn off the soil-layering correction criteria in models with multiple layers or to only use for layers of different soil types (p - y criteria).
- Added a new feature to perform incremental/pushover analysis for any load case, where users can select various Loads or Displacements to keep constant during the pushover analysis.

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 2019

- 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.
- Turn on/off soil layering principles for all soils or only for soils of the same type.
- Confined concrete can be modeled using the Mander, Priestley & Park criteria and with CALTRANS guidelines for plastic hinges.
- Export any graphical output to formatted Excel spreadsheets.
- Read soil layering and properties from output files of separate EnCPT software (used to evaluate CPT data).
- 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.