**SUMMER 2010 - ENSOFT SHORT COURSE**

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

*An Seminar and Workshop Featuring Computer Programs from Ensoft, Inc.*

**July 20-22, 2010**

**LOCATION & RESERVATIONS**

Ensoft, Inc. – Office Building
3003 West Howard Lane, Austin, Texas 78728
Tel. (512) 244-6464, Fax (512) 244-6067

Hotel Information:
LaQuinta Suites, Tel. (512) 832-2121
11901 N. MoPac Hwy., Austin, TX 78729

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

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

(These hotels are within 5-15 minutes driving distance from the training facility)

**SPEAKERS**

William M. Isenhower, Ph.D., P.E.
Project Manager, Ensoft, Inc. Dr. Isenhower is a registered professional engineer in the state of Texas, with over 30 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 a consultant to 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 was an instructor of the National Highway Institute short course “Drilled Shafts.”

Shin-Tower Wang, Ph.D., P.E.
President, Ensoft, Inc. Dr. Wang is a registered professional engineer in the state of Texas, with over 30 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.
Manager of Software Development, Ensoft, Inc. In software applications, Dr. Vasquez has supervised the development of several new releases and most notably GROUP v8 that has been completely renovated. In consulting, he has contributed with solid structural modeling and design knowledge in several projects. Dr Vasquez is a registered profesional engineer in the states of Texas and California. He has developed tools for dynamic models with earthquake, wind, and machine loads.

José A. Arrélaga, M.S.
Technical Support Manager, Ensoft, Inc. José Arrélaga has an academic and practical background in the field of structural engineering. He has organized and directly participated in a variety of large consulting projects requiring a combination of earthquake, forensic, structural, and geotechnical engineering concepts. At Ensoft, Mr. Arrélaga has been in charge of technical support, sales, and programming. His consulting practice involves projects where applications of structural theories are needed along with geotechnical-engineering concepts.

José A. Arrélaga, M.S.
Project Manager, Ensoft, Inc. Mr. Arrélaga has an academic and practical background in the field of structural engineering. He has organized and directly participated in a variety of large consulting projects requiring a combination of earthquake, forensic, structural, and geotechnical engineering concepts. At Ensoft, Mr. Arrélaga has been in charge of technical support, sales, and programming. His consulting practice involves projects where applications of structural theories are needed along with geotechnical-engineering concepts.

**REGISTRATION & FEES**

**Single Registration**

| Early Rates | Std. Rates |
| (up to Jun 21) | (after Jun 21) |
| One-Day Session on Jul. 20 | $480 | $600 |
| Two-Day Session on Jul. 21 & 22 | $700 | $880 |
| All 3-Day Sessions on Jul. 20 to 22 | $900 | $1080 |

**Multiple Registrations**

| Early Rates | Std. Rates |
| (Rates per person) | (up to Jun 21) | (after Jun 21) |
| One-Day Session on Jul. 20 | $400 | $500 |
| Two-Day Session on Jul. 21 & 22 | $600 | $750 |
| All 3-Day Sessions on Jul. 20 to 22 | $760 | $920 |

(*1) Includes refreshments and bound manuals of material on discussed topics.

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

**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: ___________________________ Exp.: __________

**GROUP v8 (New)**

- Use of multiple load cases representing concentrated loads at the pile cap and/or distributed lateral load at the pile;
- Concentrated loads at the pile cap may be defined at any position;
- Provides 2D/3D stiffness & flexibility matrices;
- Load combinations can be specified by the user and are set by load factors applied at the defined load cases;
- Max/Min envelopes may be computed for both load cases and load combinations, for different levels of loading.

www.ensoftinc.com
### One-Day Session: Tuesday Jul. 20, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Introduction</td>
<td>Computer setups, introduction and session description</td>
</tr>
<tr>
<td>8:15</td>
<td>Analytical Principles</td>
<td>Principles and discussion of soil-structure interaction</td>
</tr>
<tr>
<td>9:00</td>
<td>( p-y ) curves</td>
<td>Theoretical basis of lateral load-transfer (( p-y )) curves and experimental validation</td>
</tr>
<tr>
<td>9:45</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>( p-y ) curves</td>
<td>Description of the ( p-y ) curves used in LPILE and GROUP software</td>
</tr>
<tr>
<td>11:00</td>
<td>Material Response</td>
<td>Study of nonlinear moment-curvature of drilled shafts and prestressed concrete piles</td>
</tr>
<tr>
<td>12:00</td>
<td>Lunch</td>
<td></td>
</tr>
</tbody>
</table>

The One-Day Session has been prepared to provide expert-level training regarding the design of single piles or shafts under lateral loads using the LPILE software.

### Two-Day Session: Wednesday Jul. 21, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Introduction</td>
<td>Computer Setups, Introduction and Session Description</td>
</tr>
<tr>
<td>8:15</td>
<td>Drilled shafts under axial loading</td>
<td>Practical considerations for the design of drilled shaft foundations</td>
</tr>
<tr>
<td>9:45</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Drilled shafts under axial loading</td>
<td>Differential equation for drilled shafts under axial loading, definition of ( t-z ) curves for transfers in side resistance and ( q-w ) curves for transfers in end bearing. Computation methods used in SHAFT software.</td>
</tr>
<tr>
<td>10:45</td>
<td>SHAFT</td>
<td>Software training with SHAFT v6</td>
</tr>
<tr>
<td>12:00</td>
<td>Lunch</td>
<td></td>
</tr>
</tbody>
</table>

The Two-Day Session provides training in the design of single piles and shafts under axial loads, retaining walls, stability of slopes and on pile groups under combined loading.

For more details or online registration, visit us at [www.ensoftinc.com](http://www.ensoftinc.com) or send email to seminars@ensoftinc.com
# Design of Deep Foundations: Drilled Shafts and Piles Under Lateral and Axial Loading

*For more details or online registration, visit us at [www.ensoftinc.com](http://www.ensoftinc.com) or send email to seminars@ensoftinc.com*

## SUMMER 2008 - 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.*

The Two-Day Session provides training in the design of single piles and shafts under axial loads, retaining walls, stability of slopes, and pile groups under combined loading.

### Two-Day Session:

**Thursday Jul. 22, 2010**

<table>
<thead>
<tr>
<th>Time</th>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:15</td>
<td>GROUP</td>
<td>Detailed software training using GROUP v8.0 for Windows</td>
</tr>
<tr>
<td>9:45</td>
<td>GROUP</td>
<td>Examples of practical analyses using GROUP v8</td>
</tr>
<tr>
<td>10:30</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>10:45</td>
<td>GROUP</td>
<td>Graphics editing in GROUP v8 and in-depth software training</td>
</tr>
<tr>
<td>11:15</td>
<td>PYWALL</td>
<td>Introduction to flexible retaining walls and detailed software training using PYWALL v3.0 for Windows</td>
</tr>
<tr>
<td>12:15</td>
<td>Lunch</td>
<td></td>
</tr>
</tbody>
</table>

### GENERAL NOTES

Course attendees are encouraged to bring a notebook computer to the course. Attendants bringing computers 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 desktop computers will be available but must be reserved in advance during registration. Each attendee will have access to broadband Internet connection at the site to send and receive e-mail and to access local printers.

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.

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 and ADSC—The International Association of Foundation Drilling—may call or e-mail Ensoft to obtain information on the next scheduled course and location.

### 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.

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

### 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

For more details or online registration, visit us at [www.ensoftinc.com](http://www.ensoftinc.com) or send email to seminars@ensoftinc.com
**CURRENT ENSOFT PRICE LIST**

**Software Titles:**

- LPILE 6.0 ........................................................ $1,000
- Upgrade from LPILE v5.0 ............................. $200
- Upgrade from LPILE v4.0 ............................. $400
- Yearly maintenance (free 1st year) ............. $150
- GROUP 8.0 ................................................... $1,800
- Upgrade from GROUP v7.0 ........................ $330
- Upgrade from GROUP v6.0 ........................ $650
- Yearly maintenance (free 1st year) ............. $270
- SHAFT 6.0 ................................................... $790
- Upgrade from SHAFT v5.0 ........................ $175
- APILE Plus 5.0 ............................................. $790
- APILE Plus 5.0 (Offshore Version) ............. $1,180
- PYWALL 3.0 ............................................... $850
- TZPILE 2.0 ................................................... $750
- StabPro 3.0 ................................................ $490
- LPA 3.0 ...................................................... $490
- DynaPile 1.0 .............................................. $1,490
- DynaMat 1.0 .............................................. $1,490
- DynaN 2.0 ................................................ $2,900
- GeoMat 1.0 ............................................... $990
- Extra copies of any Ensoft manual .......... $30 each

**Call for volume, upgrades, and academic pricing**

*(Prices above are before 20% participation discount)*

---

**Books/Publications:**

- *Analysis and Design of Shallow and Deep Foundations*
  - Lymon C. Reese et al. (Wiley, Nov. 2005, 608pp.)
  - Hardback................................................... $120

  - Hardback................................................... $120

---

**LPILE v6 (New)**

- Introduces capabilities of performing analyses for Load and Resistance Factor Design (LRFD). Up to 50 load-case combinations (load factor for each load type & resistance factor for flexure and shear) and/or 100 unfactored loads may be defined by the user.
- Unfactored loads are defined for: shear, moment, axial thrust and/or distributed lateral. Load types are: dead, live, earthquake, impact, wind, water, ice or 2 user defined loads.
- LPILE v6 has a new smart interface for structural pile sections and allows the user to define up to 10 sections with nonlinear bending properties.
- In v6 users can offset the rebar cage from centroid to investigate the effect of off-centered reinforcement.
- Another new feature is automatic generation of bundled bar arrangements with 2-bar and 3-bar bundles.

---

**www.ensoftinc.com**

**ENSOFT, INC.**

3003 West Howard Ln
Austin, Texas, 78728
United States of America
phone: 512-244-6464
fax: 512-244-6067
email: ensoft@ensoftinc.com