

A new course team-taught by the two experts who "wrote the book" on the application of the 2005 NDS® ...

Designing Wood Structures Using the 2005 NDS®

**March 15-17, 2006
Irving (Dallas), Texas**

- ▶ ***Jump-start your knowledge of and skill in applying the latest National Design Specification® to practical wood structural design***
- ▶ ***Take home valuable design resources***
- ▶ ***Limited enrollment. Reserve your space now!***

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**COLLEGE OF ENGINEERING
UNIVERSITY OF WISCONSIN-MADISON**
Department of Engineering Professional Development
432 North Lake Street, Madison, Wisconsin 53706

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COLLEGE OF ENGINEERING ■ DEPARTMENT OF ENGINEERING PROFESSIONAL DEVELOPMENT

New course!

Designing Wood Structures Using the 2005 NDS®

**March 15-17, 2006
Irving (Dallas), Texas**

- **Learn to design using the latest design specification**
- **Understand both ASD and LRFD design methods for light-frame and heavy timber structures**
- **Use Mathcad® 13 design templates to solve real-world design problems**
- **Take home valuable design resources**



Designing Wood Structures Using the 2005 NDS®

March 15–17, 2006 in Irving (Dallas), Texas

Save time and money!
Inquire about our on-site courses.
Call 800-462-0876 today!

Why you need this course

If you are new to designing wood structures or unfamiliar with the 2005 National Design Specification® for Wood Construction, this course is your opportunity to jump-start your understanding of and skill in applying the latest design specification to wood structural design. Being able to effectively apply the NDS® is an essential skill for any structural designer, because it is adopted by reference in all model building codes in the United States and used to design wood structures throughout the world.

Unlike the 2001 NDS®, the 2005 NDS® has been developed as a dual format specification incorporating design provisions for both allowable stress design (ASD) and load resistance factor design (LRFD). Because the LRFD format was newly added in the 2005 NDS®, there have been several format and terminology changes to accommodate its addition, as well as a number of other changes in the specification. The 2005 NDS® Supplement has also been updated to provide the latest design values for sawn lumber and glued-laminated timber.

Emphasis on building practical design skills

The teaching methods used in this course balance focused lectures with design workshops. The lectures will provide you with an understanding of the supporting theory and design methods that you need to make effective design decisions. The hands-on problem solving workshops give you an opportunity to quickly build your design skills by solving a variety of beam, column, connection, shear wall and diaphragm design problems in both ASD and LRFD formats. You will use design solution templates written in Mathcad® 13 and explained in the 2005 edition of *ASD and LRFD: Solved Example Problems*, by Wheat and Cramer.

The workbook and the related design templates present both ASD and LRFD solutions in a side-by-side format for 40 example problems. Some are stand-alone problems, but several are associated with a single structure. Using this workbook and the related design templates should give you a level of comfort with both the ASD and LRFD design formats, plus some hands-on design tools that you can apply immediately on the job.

Who should attend

- Engineers, architects, technicians, and university faculty with little or no wood design experience
- Building officials, plans examiners, and special structural inspectors
- Seasoned designers who want to review the 2005 NDS® and try their hand at solving a variety of practical design problems using the ASD and LRFD formats and computer design templates

Valuable take-home resources

In addition to the instructors' course notes, you will receive the following valuable design resources:

- *2005 National Design Specification® for Wood Construction* – with Commentary
- *2005 NDS® Supplement – Design Values for Wood Construction*
- *ASD and LRFD: Solved Example Problems* – with more than 40 example problems solved in both ASD and LRFD and a CD of the solution templates
- A complimentary 30-day trial copy of Mathcad® 13

Team-taught by the two experts who “wrote the book”

Professors **Steven M. Cramer PhD, PE** and **Dan L. Wheat PhD, PE** co-authored *ASD and LRFD: Solved Example Problems*, the workbook that grounds the teaching methodology for this course.

Professor Steven M. Cramer of the University of Wisconsin–Madison has taught and studied the mechanical behavior of wood and wood-based materials and the design and analysis of wood structures for more than 25 years. He has been recognized for his research in wood engineering by the Forest Products Research Society. In 2002 he received the UW–Madison Chancellor's Distinguished Teaching Award.

Professor Dan L. Wheat of the University of Texas–Austin has taught and studied the behavior, design, and mathematical modeling of wood structural systems for more than 25 years. He has numerous publications and presentations to his credit and serves on a number of national and international research and teaching committees.

Limited enrollment. Reserve your space now!

Because significant learning and skill building result from using the computer design templates to solve an important range of design problems, class size is limited so that the instructors can provide individual instructional guidance and support during the problem solving workshops.

Designing Wood Structures Using the 2005 NDS®

March 15–17, 2006 in Irving (Dallas), Texas

Course outline

Wednesday, March 15

7:45 Registration and continental breakfast

Holiday Inn Select DFW North
4441 Hwy 114 at Esters Road
Irving, Texas

8:15 Welcome and course overview

Steve Pudloski
Program Director
University of Wisconsin–Madison

8:30 Wood design and the 2005 NDS®

- Understanding what makes wood different from other structural materials and managing those differences
- review of various wood products and materials
- inherent variability of wood
- grades of wood
- reference stresses

9:45 Break

10:00 Wood design and the 2005 NDS® (continued)

- Understanding the ASD and LRF design formats: What are the differences?
- advantages and disadvantages of each
- review of the new dual format code
- importance of duration of load/time effect issues
- how to determine controlling combinations

- 2005 NDS® layout and design equations
- structural behavior associated with the design provisions
- important sections of the NDS®
- using the NDS® tables
- important appendices

12:00 Lunch

1:00 Wood design and the 2005 NDS® (Continued)

2:00 Computer lab workshop: Session I

- Learning how to use Mathcad® and the design templates
- Hands-on design problem: Timber trusses

5:00 Adjourn for the day

Thursday, March 16

8:00 Expecting the unexpected: Member stability

- Columns and column buckling
- Beams and lateral-torsional buckling

10:00 Break

10:15 Putting the pieces together: Connections

- Yield modes, single and double shear
- Nails
- Bolts

12:00 Lunch

1:00 Computer lab workshop: Session II

- Stability design problems
- Connection design problems
- Special design problems of interest

5:00 Adjourn for the day

Friday, March 17

8:00 Designing light frame buildings for lateral loads

- Load paths and equilibrium
- Diaphragm problems

9:45 Break

10:00 Designing light frame buildings for lateral loads (continued)

- Shear wall segment method
- Perforated shear wall method

11:30 Wrap-up session

12:00 Final adjournment

Earn continuing education credits

By participating in this course, you will earn 18 Professional Development Hours (PDH), 18 AIA Learning Units (LU) or 1.8 Continuing Education Units (CEU).

Other related courses

Fundamentals of Seismic Design
February 20–22, 2006, Madison, WI
Course #G197

Structural Bracing for Lateral Loads and Stability
February 23–24, 2006, Madison, WI
Course #G198

Fundamentals of Structural Design for Architects, Builders, and Technicians
March 27–31, 2006, Las Vegas, NV
Course #H216

Structural Design for Non-Structural Engineers
March 27–31, 2006, Las Vegas, NV
Course #H217

Structural Steel Design
May 1–5, 2006, Madison, WI
Course #H199

Design Loads for Structures
May 8–9, 2006, Madison, WI
Course #H456

How to Design, Specify, and Detail Structural Steel Connections
May 10–11, 2006, Madison, WI
Course #H457

Introduction to the Structural Provisions of the 2006 International Building Code
May 24–25, 2006, Madison, WI
Course #H168

For course details, call toll free 800-462-0876 or see our Web site at <http://epd.engr.wisc.edu/catalogs/structural.lasso>

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Four Easy Ways to Enroll

Need to know more?

Call toll free 800-462-0876 and ask for

Program director:

Stephen T. Pudloski
pudloski@engr.wisc.edu

Program assistant:

Susanna Fuerstenberg

Or e-mail custserv@epd.engr.wisc.edu

General information

Fee covers Notebook and course materials, break refreshments, lunches, and certificate. Course materials will be distributed only to course participants.

Cancellation If you cannot attend, please notify us by March 8, 2006, and we will refund your fee. Cancellations received after that date and no-shows are subject to a \$150 administrative fee. You may enroll a substitute at any time before the course starts.

Location The course will be held at Holiday Inn Select DFW North, 4441 Hwy 114 at Esters Road, Irving, Texas. If you must be contacted during the course, phone messages may be left for you at 972-929-8181.

Accommodations We have reserved a limited number of sleeping rooms for course participants at Holiday Inn Select DFW North, 4441 Hwy 114 at Esters Road, Irving, Texas for the nights of March 14–16, 2006. The special rate is \$99 plus tax/single-double. To receive this special rate and ensure that you will have a room, please make your reservations no later than 3:00 p.m. on February 22 by calling 972-929-8181. Inform the reservation clerk that you will be attending the University of Wisconsin–Madison *Designing Wood Structures* course. Reservations must be guaranteed with one night's room and tax pre-paid by major credit card.

Course changes We reserve the right to alter the course schedule and substitute speakers when necessary.



Phone:
800-462-0876 or
608-262-1299 (TDD 265-2370)



Internet:
<http://epd.engr.wisc.edu/webH486>

Mail to:

Engineering Registration, The Pyle Center
702 Langdon Street, Dept. 106
Madison, Wisconsin 53706



Fax:

800-442-4214 or 608-265-3448



Course Information

- Please enroll me in **Designing Wood Structures Using the 2005 NDS®**
Course #H486 March 15–17, 2006 in Irving (Dallas), Texas Fee: \$895
- I cannot attend at this time. Please send me brochures on related courses.

Personal Information (Please print clearly.)

Name _____

Title _____

Company _____

Address _____

City/State/Zip _____

Phone (____) _____ Fax (____) _____

E-mail _____

Additional Enrollees

Name _____

Title _____

E-mail _____

Name _____

Title _____

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