PTC Technical Specialists E-Newsletter
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new! **PTC Product Focus:** What's New in Interactive Surface Design for Wildfire 3.0

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new!

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PTC Product Focus

What's New in Interactive Surface Design for Wildfire 3.0

With Pro/ENGINEER Interactive Surface Design (ISDX), PTC has taken surfacing to the next level of flexibility. ISDX creates a freeform modeling environment inside Pro/ENGINEER to give you more dynamic control in creating surfaces. Instead of having to input dimensions as you do with parametric modeling, you push and pull on curve points with a mouse to get the exact complex shape you are looking for.
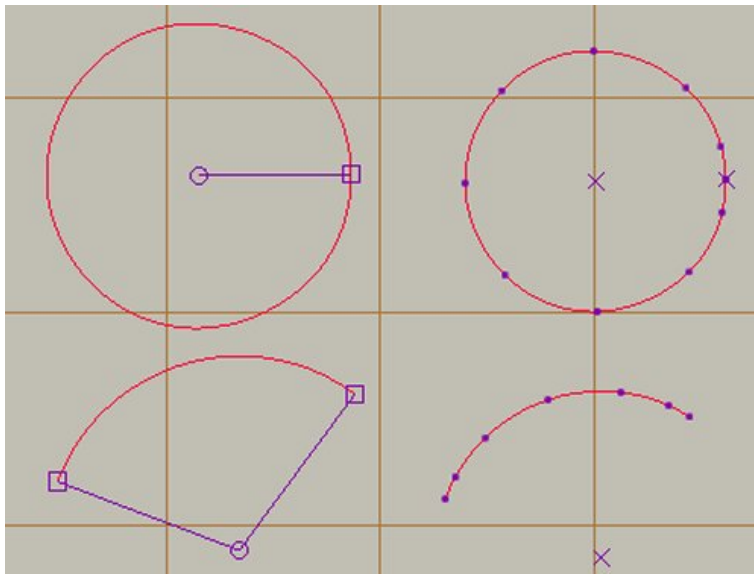
ISDX introduces a new superfeature inside Pro/ENGINEER called STYLE, which allows you to build curves and surfaces together in the same feature, with controls for continuity and relationships between all of these elements. This all happens in a dynamic environment so you can see results real-time as you make changes in your design.

Anyone creating geometry that has an aesthetic appearance or requires highly stylized surfaces will want to explore the benefits of using ISDX.

With the introduction of Wildfire 3.0, PTC continues to expand on the already powerful capabilities found in ISDX. Read on to learn what's new in ISDX for Wildfire 3.0.
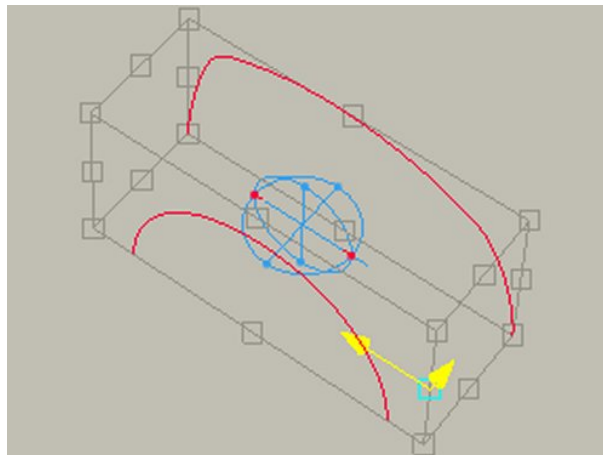
Circle and Arc Tools

Two new creation tools are now available for approximating arc and circles from directly within the Style feature. This allows for quick creation of splines that represent an arc or circle and can be accessed thru the curve creation fly out icon.

Arcs and Circles

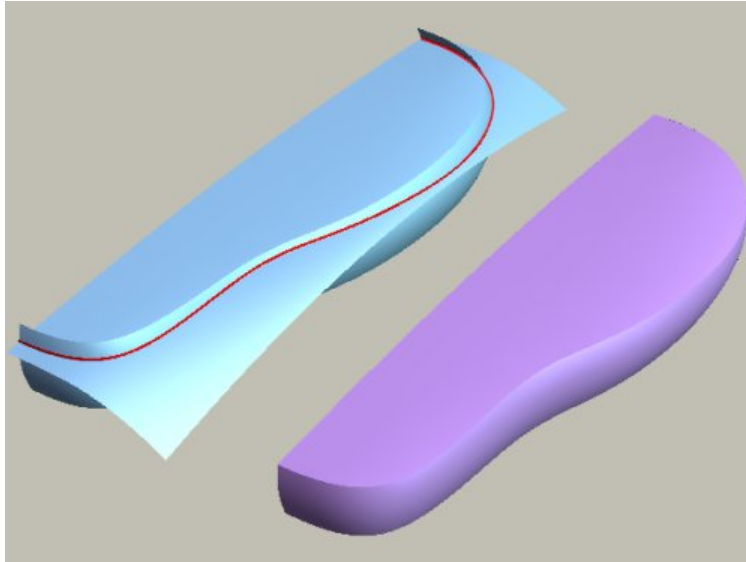## Copying and Moving Curves

Rotate and scale curves with the enhanced Move and Copy commands..

Greater control during dynamic dragging, including the ability to snap the jack to other geometry

Creating a Curve on Surface (COS) from an Intersection

You can now create a COS curve at the intersection of 2 surfaces or a surface and a plane. The resulting COS is dependent on the surfaces used and will change as the parent surfaces change shape.
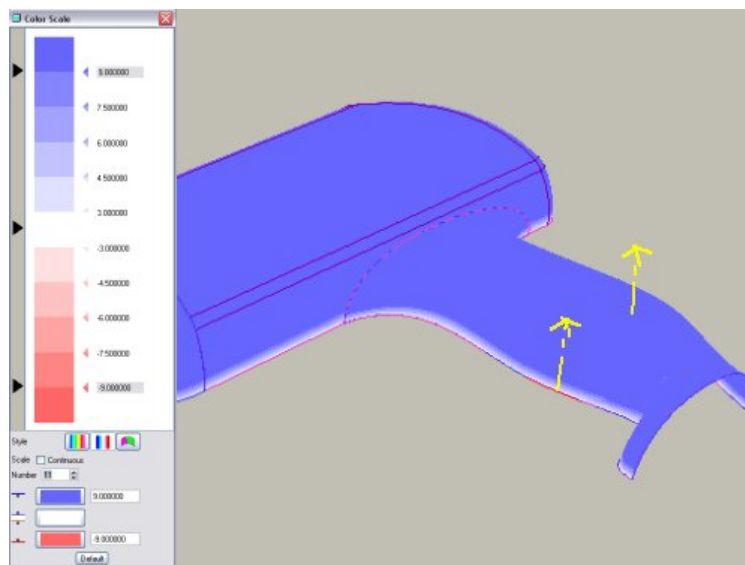
COS from Intersection of
2 surfaces

Drafted Curve and Surface Connections

The new Draft Tangent option for curves and surfaces allows for connections with draft to a plane or a surface.
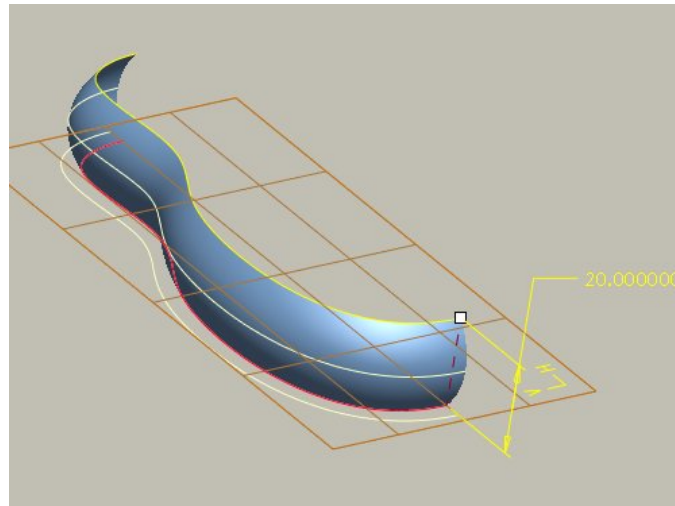
- ➢ For a curve, right-click the tangent vector and choose Draft Tangent.

- ➢ For a surface, press and hold ALT and click a connection icon.

- ➢ You can access different surface connection options by right-clicking the connection icon and choosing a connection type.

Draft Tangent Option

Offset Curve Enhancements

You can now create offset curves from free and planar curves and from curves on surfaces. Offset curves from free and planar curves can be offset normal or parallel to a reference plane. They can be redefined to change the offset direction and distance.
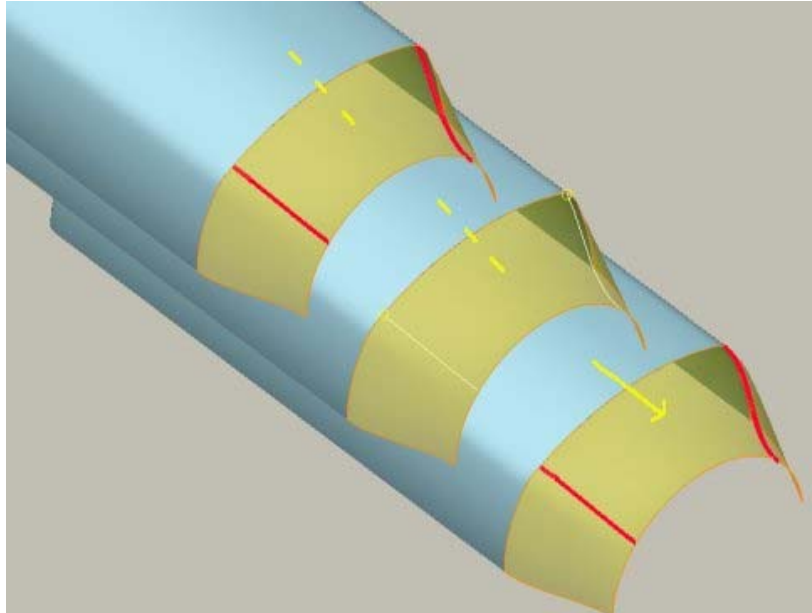

Single Approximate Curves

Using keyboard shortcuts with the Curve from Datum command, you can create a single approximate curve from a chain of curves and edges. To create a single approximate curve, use the Shift Key to select multiple edge or curves. To create a curve from individual curves, use the Control Key to select edges and/or curves.

Smart Curve Connections for Surfaces

When creating a connection between two surfaces, previous to Wildfire 3, the user had to make sure all relevant curve connections that made up the surfaces were appropriately set. Now the system will prompt to automatically convert curve connections that were not set ahead of time to accommodate the surface connection being applied.

More Information on Interactive Surface Design

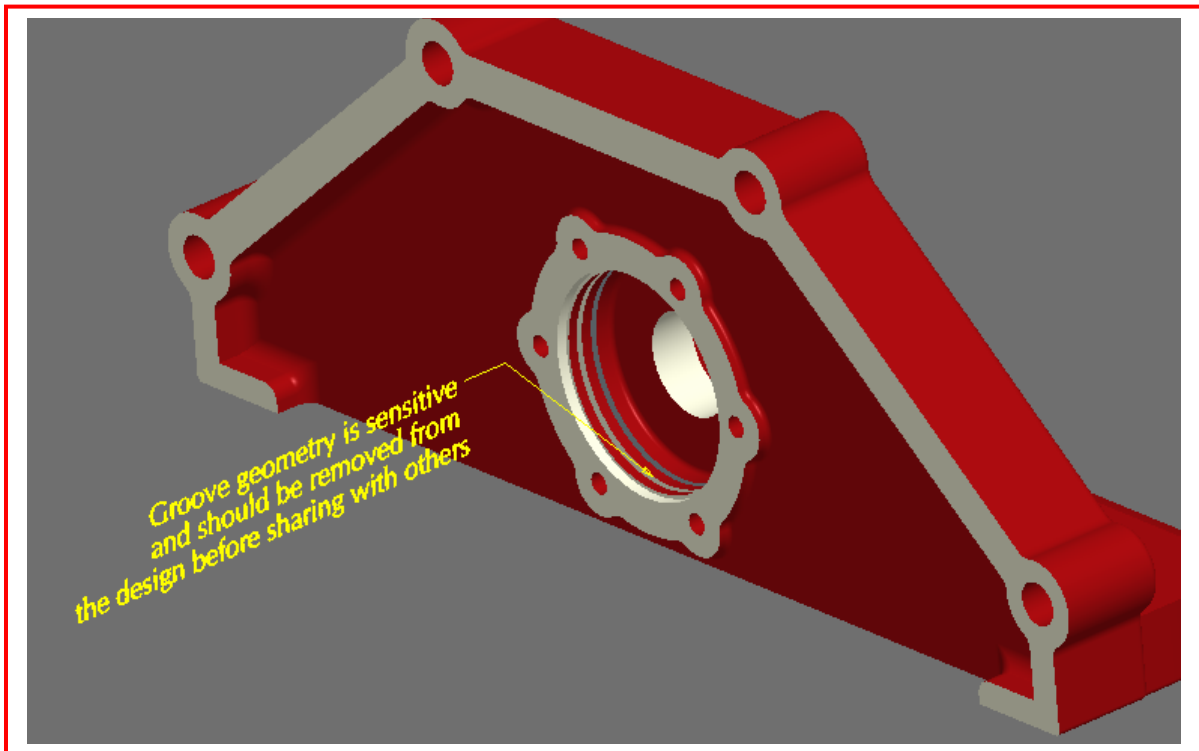To find out more about Pro/ENGINEER's Interactive Surface Design visit our Website.

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Tip of the Month

Data Sharing Tip Using Inheritance Features and Family Tables

Pro/Engineer provides many tools that support sharing of Data between individuals or design teams. This technique illustrates a method of sharing a model and protecting certain design content in the model (ie. features) that may be too critical to share. At the same time it will be beneficial to maintain associativity back to the original design model.

Let's say you have a model that you need to share with someone (like a customer or supplier), but you want to turn off a few features to protect the design content. You could save a copy of the model and delete the sensitive features and then send that model to the person. You could also simply suppress all the sensitive features and then create a STEP or IGES file and send that. These are all valid techniques, but they all lack the ability to maintain associativity to the original model.
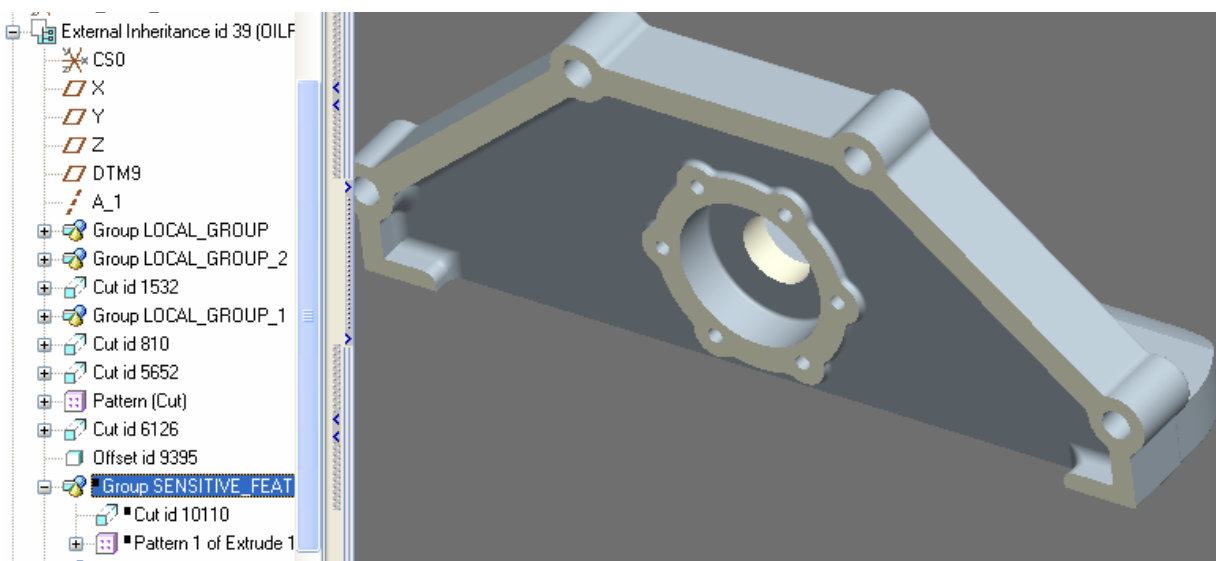

This may be an important requirement, as a design may still be changing frequently early in the design process. With the above techniques, a new model would have to be created and sent to the person for each design change using the export techniques or a new duplicated model (save as) would need to be created for each change. While this may seem like a fairly minor nuisance on the front end, it can wreak havoc on the receiving end if that person has already used the original model in a design and a new model is presented each time a change is made.

A better process that maintains a one way associativity is to use a combination of Inheritance Feature and Family Tables to accomplish this task.

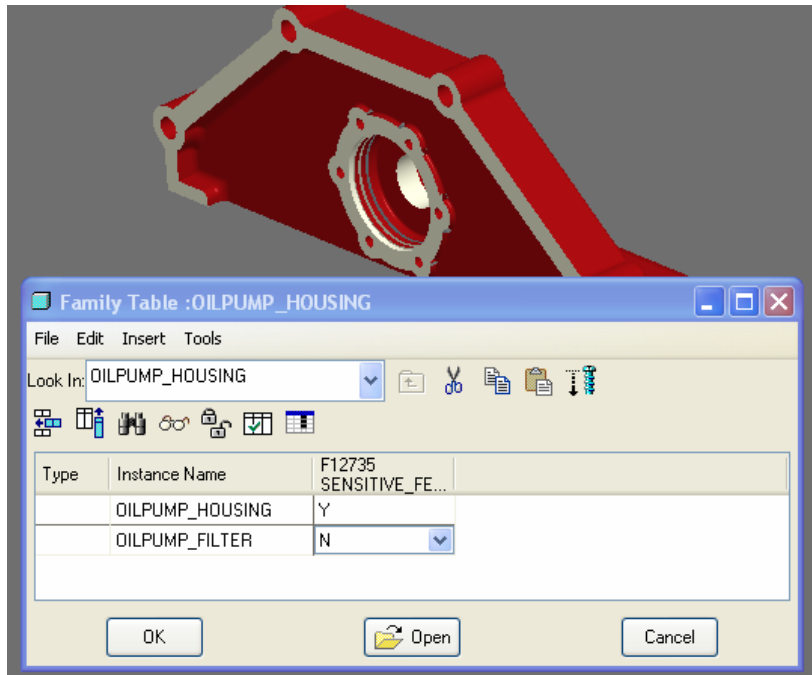First a quick definition of what an Inheritance Feature is:

Inheritance features allow one-way associative propagation of geometry and feature data from a reference part to a target part. The created target part is fully functional even when the reference part is not in session. Use Inheritance features to create variations of existing models. An Inheritance feature begins with all of its geometry and data identical to the reference part from which it is derived.

Inheritance Features alone are not enough to get the task done. At this point, if all you did was suppress the sensitive design features and create an Inheritance Feature in a new model, you would be close to accomplishing the goal. You could then pass the new model (the inherited one) off to the intended party. This would accomplish only half of our goal. This would provide the needed one way associativity, but since Inheritance Features by definition propagates "all" feature information, the recipient would have the ability to simply resume the sensitive information. This is where Family Tables comes into play.
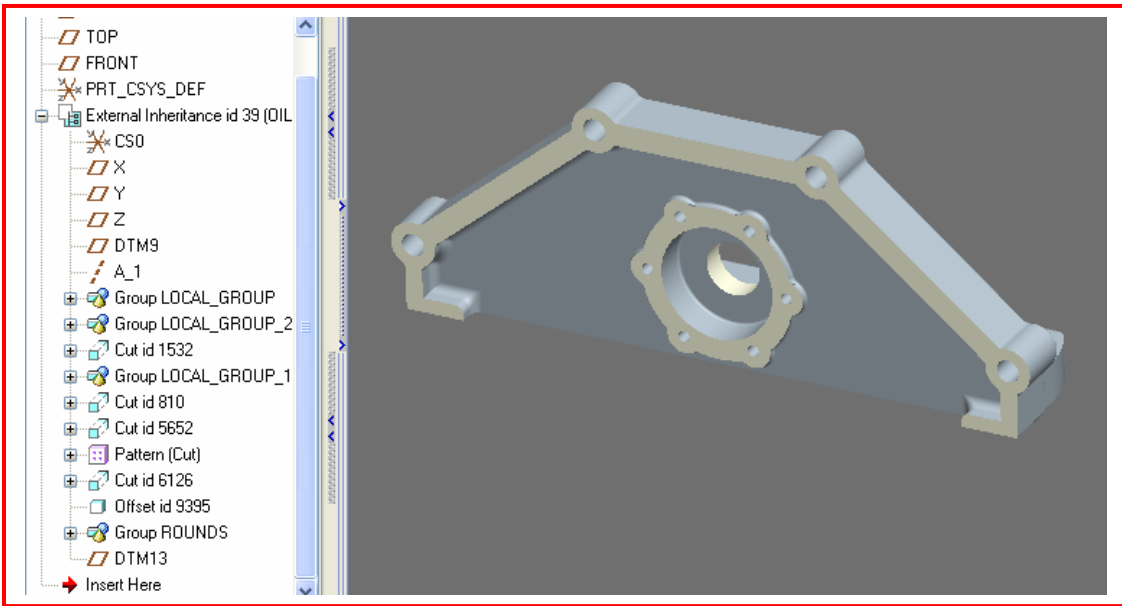

Model using Inheritance. Notice that our grooves are not in the model upon retrieval, but could be resumed from the model tree and exposed.

We are going to use a Family Table Instance as a filter to remove the features from the design model completely. In the design model, create a Family Table Instance of the design and give it whatever name you'd like. Add to the Instance all of the features you would like to prevent from being shared. Toggle the features to "NO" in the table editor. Now when the Instance is opened, it is as if the features never existed.

Creating an Instance that removes the sensitive features from the design

Now we can create our Inheritance Feature of the Family Table Instance and the sensitive design features will not be accessible. This technique also preserves the desired one way associativity such that any design changes made to the original model will automatically show up in the instance. The instance automatically maintains it's associativity to the newly created shared model by the nature of the Inheritance Feature.

Final Inherited Model: Notice that no sensitive feature information exists!!

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Announcements

Educational Resource Library

Learn things you always wanted to do - but didn't know you could.

This one stop educational resource library will help you learn more about PTC Solutions and provide you with technical materials developed by the product experts to help you become more productive.

Get tutorials, how-to videos and expert advice for:

- Pro/ENGINEER
  - Conceptual and Industrial Design
  - Detailed Design
  - Simulation/Analysis
  - Production
  - Design Collaboration

- Windchill PDMLink

- Windchill ProjectLink

- Pro/INTRALINK

- PTC Online Tools

Check out the Educational Resource Library today.

PTC Tips & Techniques Newsletter Archives

Miss an issue! Can't find that awesome technique you read about? Fear not, you can click on the link below and go through our Customer PTC E-Newsletter archives.

Click Here To Access

It's better than finding the Covenant of the Ark!

PTC Tips & Techniques Webcasts: Work Smarter. Not Harder.

Click below to see regularly scheduled Tips & Techniques technical Webcasts that are designed to provide you with the most popular time-saving tricks that Pro/ENGINEER users of all skill levels will find useful. Get more out of your maintenance dollars!

Tips & Techniques: Work Smarter Not Harder!

E-PROFILES IS HERE!!
We have been eagerly anticipating the debut of the new electronic version of Profiles Magazine and now it is here! This new web site will supplement the print edition of the magazine and will

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provide new useful features not feasible with paper media. e-Profiles will provide you with 24x7, worldwide access to key information previously available exclusively in the print version. "Tips & Tricks," a popular feature pioneered by Pro/USER, has also moved to the web and will be expanded as the site matures.

Please take a few minutes to check out this new web site. We don't think you will be disappointed.

http://profilesmagazine.com/

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Upcoming Events & Training Class Schedules

Upcoming, 2006   Your local Pro/Engineer User Groups
                                  http://www.ptcuser.org/rugs/

 June 3 - 6, 2007   Tampa, Florida
                                  PTC/USER International Conference
                                  http://www.ptcuser.org/

Events

Our seminars and conferences seek to provide you with relevant information regarding product development trends in your industry as well as innovative software learning experiences. Think of them as a constructive day off where you can share experiences and swap ideas with your peers.

If you can't manage to get away, we'll bring it to you. Check back often for regularly scheduled live webcast events.

You're Invited to Attend…

Please visit the PTC Education Services website for the latest training information including course descriptions, schedules, locations, and pricing.

- Attend a course at any PTC Center and receive a free copy of Pro/ENGINEER Wildfire Student Edition!

    http://www.ptc.com/services/edserv/index.htm

Live Instructor-Lead Virtual PTC Training Courses

Virtual Classrooms provide interactive learning with a trained PTC instructor in convenient and manageable sessions that last approximately 4 hours over a series of days. It's easy to join a class right from your desk using a phone or voice-over IP technology.

Sessions are performed just like a traditional ILT (including interactive exercises where you and the instructor can work on lab exercises together) and feature some of our most popular ILT courses. These sessions cover the exact same material as the traditional ILT in-center courses. Also look for some of our most frequently requested mini-topics delivered in the same format that are only an hour - two hours in duration.

If you have any questions about these sessions or would like to see getting other courses, not on this list, on the schedule please feel free to contact me for more details. They are a great way to bring training to you without you having to worry about location or being out from work for long stretches.

You can register for these sessions just as you would for any normal ILT class either by:

1. calling order admin at http://www.ptc.com/services/edserv/training/registra.htm or

2. you can go to PTC University directly at http://www.ptc.com/learning and submit a registration request directly. All you have to do is search the catalog by typing in "virtual" in the search field and you will see a listing.

PTC

Note: This PTC E-Newsletter will continue to be used for the following:

1) Inform you on events related to PTC products (user groups, conferences, training schedules, etc.)

2) Educate you on solutions that are available at PTC

3) Tips & Techniques using PTC Products

Note: These messages are compiled in the local PTC office and will be distributed via e-mail.

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