

Summer 2014 Digital Workshops

This course is **required** for MArch and **strongly** recommended for MEBD students who fall into the following categories:

- A) never used Rhino before
- B) has used Rhino a little here and there
- C) is fairly familiar with Rhino, but has not modeled complex curvature forms/geometries before
- D) is familiar with similar programs like 3DS Max, Maya, Sketch UP or Autocad 3D, but never used Rhino
- E) knows Rhino, V-Ray & Adobe CS6 well, but has never worked with parametric software like Grasshopper (*you may join the workshop for only the Grasshopper portion (final 3 days) at a pro-rated rate*)

If you feel you already have sufficient medium-to-advanced skills in the main software platforms listed below, and would like to be considered for exemption from this workshop, please email a small collection of work (including Rhino files (.3dm)) and post-production examples (Photoshop / Illustrator) for review.

These files should be emailed to arch@design.upenn.edu no later than **August 1, 2014**.

This 10-day workshop is being offered twice this summer:

DIGI-BLAST I: Fundamentals of 3D Modeling & Digital Output

June 20-29, 2014 (including weekend) *This workshop is attended primarily by our Summer Preparatory Design Studio students, but some additional spots may be open.*

DIGI-BLAST II: Fundamentals of 3D Modeling & Digital Output

August 4-15, 2014 (weekend not included)

3D modeling will be the prime focus of these workshops, allowing some time to address Photoshop & Illustrator "tricks" for superb drawing generations. Focused workshops on Grasshopper and use of the Digital FabLab will also be included. A more detailed breakdown of the topics to be covered follows:

During your first year at PennDesign, you will be expected to model, draw and render in a digital 3D environment. Rhino, V-Ray, Grasshopper and the Adobe Creative Suite are the standard programs used during the first year. Without a strong foundation in these programs (see course overview below), one can quickly fall behind as projects and assignments are issued and reviewed every few weeks during the first semester. Time for technical assistance

will be very limited during prime studio hours so that instead, you and your studio critic can focus on ideas and intent – not on modeling skills. A studio TA will be available during designated “office hours” for additional technical assistance throughout the semester.

These 10-day workshops will lay the foundations for a range of computer skills that are essential for navigating the digital workflow of PennDesign graduate studios. Being equipped with a comprehensive understanding of the capacity digital media has to conceptualize, organize and manage complex forms will enable one to work rigorously and precisely through idea exploration, design enhancement and ultimately meaningful representation. With practice and when used with strategic intention, digital media becomes another tool in your arsenal of available techniques and methods of form generation towards idea resolution. Not only will you learn how to use these programs, but you will also learn good organizational practices for modeling, making drawings and post-production.

3D and parametric modeling, visualization and 2D post-production presentation techniques will be covered in daily hands-on tutorials and during in-class lab time with expert guidance for developing skills. Once acquired, these skills will be useful towards explorations being made future studios at PennDesign.

Class will typically meet from 10 AM – 5 PM each day (save for Friday, June 20 when class will start at 1 PM following introductory meetings)

Topics to include:

RHINO – 3D Modeling Software

- Orientation & Warm-Up.
- Basic Elements
 - Rhino 2D Drafting
 - Rhino 3D Solid Shapes
 - Rhino 3D Extrusions
- Essential Operations
 - Precision Construction Modeling
 - Planar & Polysurface creation, manipulation & extraction
- Complex Operations
 - Free-form modeling
 - Complex Surfaces vs. Planar Surfaces
 - Topography Editing
- Precision Extraction / Application / Manipulation
- Responsive Geometry
- Surface / Solid Refinement
- Script Workshop
- Making Drawings – Plans / Sections / Elevations / Perspectives

VRAY FOR RHINO – Rendering Plug-in

- Basic material creation / assignment
- Basic Lighting
- Basic texture mapping

GRASSHOPPER FOR RHINO – Parametric modeling Plug-in

- Basic interface
- Structured tutorials for definitions
- Integration with final Rhino model

Adobe CS5 - Photoshop and Illustrator Essentials

- Paths to Illustrator
- Composite drawings (2D perspective line dwgs + renderings)
- Drawing finesse

Digital FabLab

- Digital to Physical output using laser cutter and 3-axis CNC mill.

Logistics for both workshops

Computer Requirements

To ensure thorough comprehension and ample opportunities to practice, the DigiBlast course will be taught in one of Meyerson's wireless classrooms, allowing each student to follow along directly on his/her own laptop computer, learning first-hand the interface of the various software programs and using featured tools and techniques immediately upon instruction.

In order to benefit from this class format, each student **will be required** to have his/her own personal laptop computer with them in class every day. Computers will be used throughout every studio during your time at Penn, so it is a sound investment all around.

As a PennDesign student, you will be able to receive discounts towards purchasing computer equipment through the campus store, *Computer Connection*. You will each be receiving your PennKey set up codes in mid-May which will enable you to set up your PennKey ID and password to use for on-line (or in person) purchases.

Desktop and laptops will be offered for purchase directly through Campus Express. You can view offerings on the PennDesign website www.design.upenn.edu/comp; as soon as configurations are ready, you will receive an email with further instructions on ordering. Once ordered, computers can typically take 2-3 weeks to build, ship and be ready for pick-up. This timing could prove very tight for the start of Summer Studio. **To ensure your new machines are available for pick-up in time, we strongly suggest calling Computer Connection directly to place your order by the end of May.**

Penn Computer Connection

University Square
3610 Sansom Street
Philadelphia, PA 19104-3298
Main phone: 215-898-3282

<http://www.business-services.upenn.edu/computerstore/index.html>

If you wish to purchase a computer through other means, please review the **recommended configurations** carefully to ensure maximum performance as suggested by PennDesign. Some of the primary specifications to consider are the following:

- Minimum of 4GB of memory (if purchasing a 64bit system) 3GB of memory if 32bit*
- Graphic Card should be an Open GL card with 1 GB of RAM
- The Dell *Precision* line of laptops are workstation quality and recommended for the applications used at PennDesign

If you wish to work on a MAC, it will need to have both Operating systems installed since many modeling software packages are designed specifically for a Windows platform only. Although a beta version of Rhino exists for MAC, the School strongly discourages it at this time due to its current stage of development. ALL programs taught during this class will be taught off of a Windows platform. MACs which are running dual operating systems should have a minimum of 8 GB of RAM and can be run using software such as **VMware** or **Boot Camp** which enables one to switch from the MAC side to the Windows side (Windows 7 is recommended). **

SOFTWARE LICENSES:

A limited number of licenses to use Rhino, Grasshopper, V-Ray and the Adobe Creative Suite will be available for download and use over the PennDesign network. If you work off campus and are not connected to the PennDesign network, you will not be able to access these software packages using the free licenses. Due to the limited quantity of licenses, it is a **requirement** that all incoming students own/purchase a personal copy of **Adobe Creative Suite 5** and an **Office Program** (like Microsoft Office which will include Word, Excel, PowerPoint, etc.). We also *strongly recommend* that students purchase a personal copy of **Rhino**. Having personal copies of these software packages will facilitate uninterrupted use on campus or off. You can receive educational discounts (using your PennKey ID / Penn ID card) through Computer Connection or through websites such as JourneyEd (www.journeyed.com). An educational license of Rhino costs around \$200 - the best \$ you will spend at Penn!

<http://www.rhino3d.com/eduproducts.htm>.

A PennDesign Network overview & orientation will be offered during the first full day of both Digi-Blast sessions. Topics will include design account information, software download protocol and plotting.

For any additional questions on course content, schedule and/or format, please contact the Architecture Department at : arch@design.upenn.edu

For questions on computer specifications, please visit the computer guide on PennDesign website www.design.upenn.edu/comp. Any unanswered questions in this regard, please contact Cathy DiBonaventura: cathy@design.upenn.edu.

*There will be a guide on the PennDesign website to help students choose their machine www.design.upenn.edu/comp. More detailed information about 64bit vs 32bit will be available.

**The network environment of PennDesign is Windows-based; school computers are PCs. Although it is possible to use MACs in this environment (and many do), we recommend that students are experienced computer and MAC users.