*digi-blast*

digital workshop
summer
2015

Department of Architecture
School of Design
University of Pennsylvania

Summer 2015 Digital Workshops
This course is **required and mandatory** for all MArch students.

This 10-day workshop is being offered twice this summer:
**DIGI-BLAST I: Fundamentals of 3D Modeling & Digital Output**
**June 19 - 28, 2015** (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 3 - 14, 2015** (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 Penn Design, 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.
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These 10-day workshops will lay the foundations for a range of computer skills that are essential for navigating the digital workflow of Penn Design 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 modelling, 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 Penn Design.

Topics to include:
RHINO — 3D Modelling Software
• Orientation & Warm-Up,
• Basic Elements
  • Rhino 2D Drafting
  • Rhino 3D Solid Shapes
  • Rhino 3D Extrusions
• Essential Operations
  • Precision Construction Modelling
  • 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
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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 Digi-Blast 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 setup codes in mid-May which will enable you to set up your PennKey and password to use for on-line (or in person) purchases.

Desktops and laptops will be offered for purchase directly through Campus Express. You can view offerings on the PennDesign website www.design.upenn.edu/; 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
3601 Walnut Street, Second Floor
Philadelphia, PA 19104-3288

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 16GB of memory
- Graphic Card should be an OpenGL card with 2 GB of RAM
- The Dell Precision line of laptops are workstation quality and recommended for the applications used at
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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:

All students should purchase a software license for the software Rhinoceros, which is available at the Computer Connection for $95. Due to the limited quantity of licenses, it is a requirement that all incoming students own/purchase a personal copy of Adobe Creative Cloud. Office 365 is available for free to incoming students.

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.

** 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.