OPERATION: DIGI-WORKS

Instructor: Keith Kaseman   kk@kbas-studio.com
                                   www.kbas-studio.com

COURSE OVERVIEW

OPERATION: DIGI-WORKS is a production-based design research seminar geared to explore and utilize a customized spectrum of advanced digital modeling and fabrication tools and techniques within the DFL.

This exploratory course is inherently (and simultaneously) digital and physical, as a prime directive built into the overall set-up is that participants will iteratively navigate a wide range of working methods and spatial / material results. Exploiting the extensive arsenal of digital tools, expert knowledge, CNC fabrication machines and traditional shop equipment at the DFL, participants of this course set out to iteratively design and develop highly refined, cumulative digital-spatial / material constructs which may only be developed under such experimental circumstances.

Analytical drawings, intricately operable and animated digital models, rapidly produced physical assemblies, precisely fabricated jigs and meticulously final constructs will constitute a rich texture of evidence compiled through a series of orchestrated phases of exploration and work throughout the semester.

OPERATION: DIGI-WORKS can be conceived of as a customized ride through a rich digital-physical continuum.

DIGITAL PLATFORMS: Monolith*, Rhino, Grasshopper
MATERIALS: Foam, Wood, Metal, Plastic
DFL TOOLS: CNC Router(s), CNC Hot-wire Foam Cutter, Waterjet, Laser-Cutters, Vacuum Form, etc.

* Monolith is a brand new and incredibly exciting voxel-based modeling platform developed by Andrew Payne and Panagiotis Michalatos at Autodesk. See http://www.monolith.zone for more information.

DIGITAL MODELING PRE-REQUISITES
Participants will be utilizing Monolith, Rhino and Grasshopper as the primary digital tools, with directed instruction of particular techniques and approaches built into the course. Essential working experience with Rhino is required for enrollment. While previous experience in Grasshopper would surely prove to be beneficial it is NOT a pre-requisite. Lastly, and especially as it has only been recently released, previous working experience with Monolith (which is still very rare!) is NOT a pre-requisite for this course.

DIGITAL FABRICATION PRE-REQUISITES
While a working knowledge of CNC production (i.e., 3-axis mills, laser-cutters, 3d-printers) would also prove to be beneficial, prior hands-on experience with such tools is not required for enrollment in this course. Nonetheless, each participant should at least become familiar with the capacities and potentials built into such machinery by visiting the Digital Fabrication Lab (and countless precedents are readily available online and through publications). Formal orientations to the CNC machinery required for use in this course will be scheduled appropriately during the first portion of the semester, though these sessions may not be during our official course time-slot. Orientation schedules, protocols and options will be discussed as we kick the semester off.

(Please note: students will be responsible for all material costs, procurement, storage and safe handling.)