This spreadsheet lays out the online tutorial content for the Studio AIR design subject in the Architecture, Building and Planning Faculty of the University of Melbourne.

Custom content developed and presented by Gwyllim Jahn

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Links:
Ex-Lab (http://www.exlab.org/)
Elseware (http://elsewarecollective.com/)

Additional credits:
Additional content was sourced from ModeLab collective (http://lab.modecollective.nu/) a webinar from Grasshopper creator, David Rutten and Atelier Panda (http://www.atelierbinturong.com). All content is freely available online. We thank and credit these contributors.

Use by others:
We encourage others learning or introducing computational design concepts to use these resources. If you are using these within an institution please let us know. We'd like to get your thoughts on the content and see the outcomes.

Notes:
The video tutorials that we have put together are intended to demonstrate the use of particular Grasshopper components or geometry and programming concepts in the most interesting and architecturally relevant ways as we can manage. In some cases this is done within larger definitions (that are not explained) or using more sophisticated data structuring (again, that is ignored in the demonstration). This is intentional and we hope, not too frustrating. At these points in the videos later tutorials are sometimes mentioned (for you to skip too if the frustration gets too much) or simply the technical topics which will shed more light on the subject.

Our experiences with developing content and delivering it a workshop or studio environment have taught us that without some of this compromise, initial exercises can be incredibly uninspiring and unexciting. To inject this inspiration into the introduction of the design environment we have taken some of the most inspiring and exciting design projects of late and 'reverse-engineered' them (although they are not perfect imitations). We would appreciate your feedback if specific areas do still promote confusion.

ex–lab

elsewarecollective

FACULTY OF ARCHITECTURE, BUILDING AND PLANNING
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	Technical videos	*Demonstration videos*	*Supplementary videos*
Exploring the Development Environment (1hr 30mins)	Modelab Introductory videos 1,2,3 (1hr)	Course Overview(11:34) Lofting and State Capture(6:45) Triangulation Algorithms(10:20)	Rutten Webinar (9:10 to 16:20)
Understanding Geometry, Transformations and Intersections (2hrs)	Modelab Introductory Video 4 (10 mins) Vector Fundamentals (18:04) Mesh Geometry (12:49)	Curve Menu (14:18) Transform Menu (27:25) Detailing Planar Joints(13:10) Contours and Sectioning(7:55) Curve Intersections(13:50) AA Driftwood Surfaces(10:00)	Rutten Webinar (18:20 to 1:45:10)
Controlling the Algorithm: Lists, Flow Control, Matching (1hr)	(20mins) Modelab Introductory Video 5 (15 mins) Modelab Data Trees Video 2 Rutten Webinar - Lists and cull pattern Rutten Webinar - using cull pattern to delete items conditionally	Creating a gridshell(11:14) Patterning Lists(11:26)	
Introducing Parameter Space, Data Types and Functions (1hrs 50mins)	Modelab introductory videos 6,7,8 (50mins) Modelab Panelling Surface Videos 4,5 (30 Mins) Field Fundamentals(7:45) Expressions(12:20)	Aranda Lasch - Fractal Tetrahedra(12:55)	Rutten Webinar - Formatting Data Rutten Webinar - Data Types Rutten Webinar - Image sampling Modelab Panelling Surfaces Videos 1-3
Demonstrating Controllers, Samplers and Fields (1hr)		Evaluating Fields (10:33) Graphing Section Profiles (8:30) Graph Controllers (9:04) Image Sampling (11:03) Hitoshi Abe - Aobe Tei (22:32)	
Controlling Data Structures: Visualisation, Path Objects and Matching (1hr 30mins)	Modelab Data Tree Videos 3,4 (25 mins) Tree Statistics and Visualisation (6:10) Tree Dimensions (8:29) Tree Menu (11:16) Path Mapper (10:01)	AA Driftwood Frames (13:34) Aranda Lasch - Continuous Patterning (19:00)	
Encapsulating Algorithms: Clusters and Iteration (1hr 15mins)	Travelling Salesman - Clusters (9:20) Travelling Salesman - Clusters and History (4:12) Travelling Salesman - Python (6:00)	AA Driftwood Unrolling (15:45) Gradient Descent (7:49) Fractal Patterns (29.51)	
Extending the Framework: Kangaroo Physics Plugin (20 mins)	Embedding Material Logic - Intro (11:52) EML - Tensile and Rigid Bodies (12:35) EML - Bending and Hinges (19:32) EML - Equilaterals and Planarisation () EML - Point Distrubution ()	Voussoir Cloud Input (12:30) Voussoir Cloud Form Finding (7:13)	Plethora Project - Rhino Python Tutorials
Extending the Framework: Meshes and Interoperability (20 mins)	Thinking Topologically using Starling and Weaverbird () Data Ecologies in Firefly ()	AA Hyperthreads () Cellular Structures ()	
Facilitating Organisation and Management (25 mins)	LazyCutter (0:45)	Voussoir Cloud Cut Layout (7:37) Voussoir Cloud Tabs (17:10) The Morning Line Cut Layout ()	Mesh Strips ()

Click on tutorial name to follow link.