Course Information Package

PLANNING FORM FOR AN EDUCATIONAL MODULE
(to be completed by the teacher)

Programme of Studies:	**BA in Interior Design**
Name of the module:	**IND313 Advance Computer Aided Design**
Target group:	**Interior Design students**
Level of the unit:	**BA –5th**
Entrance requirements:	**IND223**
Number of ECTS credits:	**6 (Average student working time: 150 hours)**

Competences to be developed:	
1	To introduce students to IT technologies in relation to their specialization.
2	To enable students to have an understanding of the potential and limitation of computing in relation to developments and trends in the web design profession and industry.
3	To develop an ability to explore the significance of electronic imaging and its crucial professional standing in relation to web design.
4	To provide students with experience of assembling information on the screen.
5	To give students hands on experience, familiarization and instruction to two design softwares: Rhinoceros 5 and Keyshot.

Estimated student's work time distribution in hours:			
Conduct hours		Student's private time	
Lecture	22	Project work	25
Studio Work	17	Experimentation	15
Final Critique	3	Research	15
Interim Critiques	3	Interim Critiques Preparation	12
Final Assessment	3	Final Critique Preparation	9
		Use of External Resources	14
		Tutorials	12
Total:	48	Total:	102

Learning outcomes	Educational activities	Estimated student's work time in hours	Continuous Assessment based on Project work
WEEK 1: - Overview - What is Rhino. - Object types. - Surface. - Poly-surface. - Solid. - Curve. - Polygon Mesh. - The Rhino for Windows Interface. - Viewports. - Viewport tabs. - The Mouse. - Entering Commands. - Repeating commands. - Canceling commands. - View the Command Line History. - View Recent Commands. - Panels. - Navigating Around the Model . - Zooming extents. - Move Objects. - Copy Objects. - Creating Geometry. - Drawing lines. - To draw line segments. - To draw a poly-line. - Drawing free-form curves. - Drawing interpolated curves. - Drawing curves from control points. - Modeling aids. - Saving your work. - Layers. - Selecting objects. - Filter Selection. -	Lecture Attendance	2	**Design Intelligence – 40%**
	Studio Work	1	
	Project work/ Experimentation/ Research	4	
	Interim Critique Preparation	0	**Research and Methodology – 20%**
	Final Critique Preparation	0	
	Tutorial	0	
WEEK2: - Coordinate entry. - Absolute coordinates. - Polar coordinates. - Distance and angle constraint entry. - Using the Shift key to toggle Ortho on and off. - Distance and angle constraint entry. - Practice using distance and angle constraints. - Object Snaps. - SmartTrack. - Tab Constraint. - Planar constraint. - Viewports and construction planes. - Changing a Cplane using the 3 Point option. - Setting a Cplane to an object. - Viewports and construction planes. - Creating a named construction plane. - Drawing with precision. - Circles. -	Lecture Attendance	2	**Experimentation and Analysis – 20%**
	Studio Work	1	
	Project work/ Experimentation/ Research	4	
	Interim Critique Preparation	1	**Time management and Presentation – 20%**
	Final Critique Preparation	0	
	Tutorial	1	
WEEK 3: - Drawing with precision.	Lecture Attendance	2	
	Studio Work	1	

- Arcs.	Project work/ Experimentation/ Research	4
- Rectangles.		
- Drawing a rectangle from diagonal corners.		
- Drawing rectangles from a centre point with a length and width, and rounded corners.	Interim Critique Preparation	1
- Making the ellipse solid.	Final Critique Preparation	0
- Extruding the polygons.		
- Free-form curves.		
- Practice drawing curves.		
- Drawing a curve interpolate through points.		
- Making the curve into a surface.		
- Creating the construction lines.		
- Making a solid.	Tutorial	1
- Create Surfaces from Curves.		
- Edge curves.		
- Extrude curves.		
- Loft curves.		
- Revolve curves.		
- Revolve curves with a rail.		
- Sweep along one rail curve.		
- Sweep along two rail curves.		
WEEK 4:	Lecture Attendance	2
	Studio Work	1
- Editing Geometry.	Project work/ Experimentation/ Research	4
- Fillet.		
- Joining connected objects.		
- Filleting circles.		
- Blend.	Interim Critique Preparation	1
- Blending two curves with Quick Blend.	Final Critique Preparation	3
- Making a lofted surface with closed curves.		
- Making a lofted surface with open curves.		
- Chamfer.		
- Turning curves into surfaces.		
- Copy.		
- Rotate.		
- Group.		
- Mirror.		
- Join.		
- Editing with the gumball.		
- Copying objects with Gumball.		
- Rotating objects with Gumball.		
- Scaling with Gumball		
- Relocating Gumball Widget.		
- Trim.		
- Split.		
- Extend.		
- Extending to a surface.	Tutorial	1
- Offset.		
- Offset poly-line with sharp corners.		
- Offset poly-line with round corners.		
- Offset curve on both sides.		
- Offset surface.		
- Offset surface to a solid.		
- Offset poly-surface.		
- Shell a poly-surface.		
- Point editing.		
- Edit control points.		
- Make a lofted surface.		
- Nudge Controls.		
- Control point editing.		
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WEEK 5: - Creating Deformable Shapes. - Split a surface with a curve. - Assigning display colour and material colour. - Modelling with Solids. - Fillet edges. - Copying on a different layer. - Making solid text. - Offsetting solid text. - Creating surfaces. - Creating a vertical plane. - Creating a plane from 3 points. - Create a plane from corner points. - Surface from planar curves. - Surface from edge curves. - Extruding curves. - Extruding a curve along another curve. - Extrude a curve with a taper (draft angle). - Create a surface from planar curves. - Trimming surfaces. - Splitting surfaces. - Join the surfaces. - Creating an extruded surface from a curve to a point.	Lecture Attendance	2
	Studio Work	1
	Project work/ Experimentation/ Research	4
	Interim Critique Preparation	1
	Final Critique Preparation	0
	Tutorial	1
	Sub-Total:	-

Learning outcomes	Educational activities	Estimated student's work time in hours	Assessment
WEEK 6: - Lofting surfaces. - Creating section curves from the surfaces. - Creating contour curves across the hull surfaces. - Creating an edge curve from the surfaces. - Creating surfaces from the curves. - Shell. - Revolving surfaces. - Rail revolve. - Sweeps and curve networks. - Creating profile curve.	Lecture Attendance	2	
	Studio Work	1	
	Project work/Experimentation/ Research	4	
	Interim Critique Preparation	1	
	Final Critique Preparation	0	
	Tutorial	1	
WEEK 7: - Rendering. - Assigning material by object. - Assigning material by layer. - Add a new material to a layer. - Adding textures.	Lecture Attendance	2	
	Studio Work	1	
	Project work/Experimentation/ Research	4	
	Interim Critique Preparation	1	
	Final Critique Preparation	0	
	Tutorial	1	
WEEK 8: - RENDERING WITH KEYSHOT. - User Interface. - Render Options. - Output. - Still Image. - Advanced Control. - Samples. - Ray Bounces. - Anti Aliasing. - Shadow Quality. - Global Illumination Quality. - DOF (Depth of Field). - Caustics. - Sharp Shadows. - Sharper Texture Filtering. - Global Illumination Cache. - Maximum Samples. - Importing and Working With Data. - Importing Models. - Center Geometry. - Snap to Ground. - Orientation. - Adjusting Camera to Look at Geometry. - Adjusting Environment to Fit Geometry. - Using Material Template. - Import NURBS Data.	Lecture Attendance	2	
	Studio Work	1	
	Project work/Experimentation/ Research	4	
	Interim Critique Preparation	1	
	Final Critique Preparation	3	
	Tutorial	1	
WEEK 9: - Model Units. - Navigating a Scene. - Tumbling Your Camera. - Panning Your Camera.	Lecture Attendance	2	
	Studio Work	1	
	Project work/Experimentation/ Research	4	

- Dollying Your Camera In and Out. - Import NURBS Data. - Hiding Parts. - Showing Parts. - Moving and Parts Models. - Working With Materials. - Accessing The Library. - Editing Materials. -	Interim Critique Preparation	1	
	Final Critique Preparation	0	
	Tutorial	1	
	Sub-Total:	-	

Learning outcomes	Educational activities	Estimated student's work time in hours	Assessment
WEEK 10: - Texturing Overview. - Planar X. - Planar Y. - Planar Z. - Box Map. - Spherical. - Cylindrical. - UV Coordinates. - Interactive Mapping Tool. - Texture Settings. - Colour Maps. - Specular Maps. - Bump Maps. - Black and White Values. - Normal Maps. - Bump Height. - Opacity Maps. - Opacity Mode.	Lecture Attendance	2	
	Studio Work	1	
	Project work/Experimentation/ Research	4	
	Interim Critique Preparation	1	
	Final Critique Preparation	0	
	Tutorial	1	
WEEK 11: - Adjusting Lighting. - Changing Environments. - Adjusting Contrast. - Adjusting Brightness. - Controlling Lighting Directions and Reflections. - Ground Shadows and Reflections. - Realtime Settings. - Setting Resolution. - Lock Aspect. - Lock Resolution. - Brightness. - Gamma. - Quality Mode. - Performance Mode. - Ray Bounces. - Reflections. - Refractions. - Detailed Shadows. - Global Illumination.	Lecture Attendance	2	
	Studio Work	1	
	Project work/Experimentation/ Research	5	
	Interim Critique Preparation	1	
	Final Critique Preparation	0	
	Tutorial	1	
WEEK 12: - Working in class to finalise projects.	Lecture Attendance	0	
	Studio Work	3	
	Project work/Experimentation/ Research	5	
	Interim Critique Preparation	1	
	Final Critique Preparation	0	
	Tutorial	1	
WEEK 13: - Working in class to finalise projects. - Final Project Presentation and discussion.	Lecture Attendance	0	
	Studio Work	3	
	Project work/Experimentation/ Research	5	
	Interim Critique Preparation	1	
	Final Critique Preparation	3	
	Tutorial	1	

		Sub-Total:	127	
Use of Resources:				
Library	Literature search, research		4	
Hi End Lab	Printing, scanning, Editing		6	
General IT labs	General use, Internet use		2	
Workshops	General use according to project work		0	
Print Resources	Printing, scanning, Editing		2	
		Sub-Total:	14	

PART B: Complementary Material.

Language of Instruction:
English

Assessment Type		Weights
Interim Critique	Exercises in Class.	33%
Final Critique	Final presentation of the project.	33%
Final Assessments	Final presentation of the project.	34%
	TOTAL	**100%**

Note: The assessment criteria for Interim/Final Critiques and the Final Assessment are: Design Intelligence 40%, Research and Methodology 20%, Experimentation and Analysis 20%, Time management and Presentation 20%