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## Excerpt from the official document

### COMPUTER APPLICATIONS (CSC60503 / ARC2723)

Prerequisite: None

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#### Project 1: Revit Modeling & Documentation

50% of final marks

Submission date: **Week 8 (Friday 26 May 2017)**

Project 1	Individual	LO 1-2	50%	Revit Modelling & Documentation	Revit Model Documentation drawings
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#### Introduction

This project involves the production of a Revit model of the selected architectural design using Architectural Components such as Wall, Roof, Stairs, Floor, Curtain Wall, Doors and Windows. At the end of the project, the model shall be used to generate documentation drawings, using Revit Architecture's Documentation Components such as Sheets, Titleblock, Sections, Room Tags, Schedule & etc.

#### Objectives of Project

1. Understand and apply Revit Architecture's modeling tools to generate a building model.
2. Understand and execute the Documentation Components of Revit Architecture to create drawings documentation.

#### Learning Outcomes of this Project

1. To produce a Revit model of the selected architectural design.
2. To produce architectural drawings documentation of the selected architectural design.
3. To record Work in Progress (WIP) as progressive evidence of the working process.

#### Tasks - Methodology

##### A. Revit Modeling

1. Based on the selected architectural design, you are to generate a Revit model. The model must be compliant with **LOD200 requirements** (refer Appendix 1)
2. Your Revit model must include at least **TWO Revit Family components**.
3. You are required to create a blog or Facebook album for public access. The Work in Progress (WIP) print screens and test renderings must be uploaded to the above online platform **REGULARLY** to show progressive evidence of the working process. It will serve as a communication and mutual learning platform. You are encouraged to visit your peers' WIP and give constructive comments and suggestions.

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## B. Architectural Drawings Documentation

1. Using the Revit model from Project 1, you are required to prepare building documentation drawings in A1 size containing the following components:
  - Plans
  - Elevations
  - 2 Sections
  - 2 Callouts on sections
  - 1 Exploded isometric
  - 1 Room Schedule showing area tabulation
2. You are required to create a blog or Facebook album for public access. The Work in Progress (WIP) print screens and test renderings must be uploaded to the above online platform **REGULARLY** to show progressive evidence of the working process. It will serve as a communication and mutual learning platform. You are encouraged to visit your peers' WIP and give constructive comments and suggestions.

## Submission Requirements

Your submission shall include the following contents:

Submit a folder containing the Revit file and Revit Family file to TIMeS.



Submit complete set of A1 size drawings in PDF to TIMeS.



Upload Work in Progress (WIP) print screens and to your WIP website



## Assessment criteria

### Assessment criteria

#### Revit Modeling (25%)

- Completion of the Revit model 10
- LOD 200 compliance 5
- Revit Family file 5
- Work in Progress evidence 5

#### Architectural Drawings Documentation (25%)

- Completion of the documentation drawing 10
- Drawing layout and quality 10
- Work in Progress evidence 5

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## Project 2: Exterior & Interior Renderings

50% of final marks

Submission date: **Week 13 (Friday 7 Jul 2017)**

Project 3	Individual	LO 3-4	50%	Exterior & Interior Renderings	Renderings
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### Introduction

The third project involves the production of photorealistic still renderings using 3DS Max of the selected architecture design with materials, appropriate camera views and post-production enhancement on the visual outcome. The visualisation work would be assessed on the types and ways materials are used, types of lights and effects used to set up the scene, setup of appropriate camera views for rendering and skills of using post-production tools to enhance the visual outcome.

### Objectives of Project

1. To create materials for 3D objects.
2. To use lights in 3DS Max for exterior and interior rendering.
3. To set up good photographic compositions using cameras in 3DS Max for final rendering.
4. To understand and execute the appropriate rendering settings.
5. To enhance the visual outcome of the renderings using post-production tools.

### Learning Outcomes of this Project

1. To produce photorealistic renderings.
2. To record Work in Progress (WIP) as progressive evidence of the working process.

### Tasks - Methodology

1. Using the same model from Project 1, you are required to add in materials, lights, cameras and site context for final rendering. Site context may include landscaping, furniture, vehicles and human characters. You may use post-production tools such as Adobe Photoshop to enhance the visual outcome.
2. The Work in Progress (WIP) must be uploaded to the mentioned online platform to show progressive evidence of the working process. It will serve as a communication and mutual learning platform. You are encouraged to visit your peers' WIP and give constructive comments and suggestions.

### Submission Requirement

- Submit 3DS Max file with materials textures to TIMeS.
- Upload the final renderings (1000px length JPEG) to your WIP website
  1. Exterior renderings (1 eye level view OR bird's eye view)
  2. Interior rendering (1 eye level view)
- Upload Work in Progress (WIP) print screens and test renderings to your WIP website.

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## Assessment criteria

### Exterior renderings (25%)

- Completion of the 3D scene with level of details 5
- Texturing and UVW map 5
- Photorealistic rendering with good compositions and relevant site context 5
- Work in Progress evidence 10

### Interior renderings (25%)

- Completion of the 3D scene with level of details 5
- Texturing and UVW map 5
- Photorealistic rendering with good compositions and relevant site context 5
- Work in Progress evidence 10

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**Marking criteria**

**Marks shall be distributed as follow:**

<b>Project 1: Revit Modeling Assessment Rubric (25%)</b>		
Completion of the Revit model 10%	8-10%	100% completion with walls, roofs, floors, doors and windows components.
	5-7%	50-70% completion with some components missing.
	2-4%	20-40% completion with most of the components missing.
	0-1%	Shows very little progress in the building model.
LOD 200 compliance 5%	4-5%	Complies totally with structure and finishes assigned with materials and thickness.
	2-3%	Complies with structure and finishes not assigned with materials and thickness.
	0-1%	Does not comply at all.
Revit Family file 5%	4-5%	Used appropriate methods to create the family, with relevant, legible and workable parameters.
	2-3%	Used appropriate methods to create the family, with some irrelevant or confusing parameters.
	0-1%	Creation method is not appropriate and parameters are mostly not working.
Work in Progress evidence 5%	4-5%	Showed clear progressive evidence of working process
	2-3%	Showed minimal progressive evidence of working process
	0-1%	Failed to show progressive evidence of working process

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<b>Project 1: Architectural Drawing Documentation Assessment Rubric (25%)</b>		
Completion of the documentation drawing 10%	8-10%	100% completion with required plans, elevations, sections, callouts, phasing, perspectives, rooms tags, doors & windows tags.
	5-7%	50-70% completion with required plans, elevations, sections, callouts, phasing, perspectives, rooms tags, doors & windows tags.
	2-4%	20-40% completion with most of the components missing.
	0-1%	Shows very little progress in the drawings.
Drawing Layout & Quality 10%	8-10%	Very clear and tidy arrangement of drawings. Adhere to drawing conventions. Used appropriate titleblock with relevant drawing information. Drawings comply with LOD consistency.
	5-7%	Appropriate presentation and arrangement of the drawings. Does not follow some drawing conventions. Used appropriate titleblock with relevant drawing information. Some inconsistency in LOD compliance.
	2-4%	Arrangement of drawings is messy, does not follow drawing conventions, missing information in titleblock, inconsistent in LOD compliance.
	0-1%	Fail to show the above.
Work in Progress evidence 5%	4-5%	Showed clear progressive evidence of working process
	2-3%	Showed minimal progressive evidence of working process
	0-1%	Failed to show progressive evidence of working process

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## Project 2 Assessment Rubrics

CRITERIA	DESCRIPTION	MARK
<p>Completion of the 3D scene with level of details</p> <p>Texturing and UVW map</p> <p>Quality of space with good compositions and relevant site context</p> <p>WIP evidence</p>	<p>High level of details and work quality in overall production.</p> <p>Applied the correct texture and UVW map scale</p> <p>Demonstrated good skills to show the quality of space with good compositions, with relevant context such as landscaping, human figures &amp; etc.</p> <p>Showed clear progressive evidence of working process</p>	<p>A 20-25%</p>
<p>Completion of the 3D scene with level of details</p> <p>Texturing and UVW map</p> <p>Quality of space with good compositions and relevant site context</p> <p>WIP evidence</p>	<p>Moderate level of details and work quality in overall production.</p> <p>Applied the correct texture and UVW map scale</p> <p>Attempted to show the quality of space with appropriate compositions, with relevant context such as landscaping, human figures &amp; etc.</p> <p>Showed clear progressive evidence of working process</p>	<p>B 15-19%</p>
<p>Completion of the 3D scene with level of details</p> <p>Texturing and UVW map</p> <p>Quality of space with good compositions and relevant site context</p> <p>WIP evidence</p>	<p>Appropriate level of details and work quality in overall production.</p> <p>Applied the correct texture and UVW map scale</p> <p>Minimal attempt to show the quality of space with appropriate compositions, with relevant context such as landscaping, human figures &amp; etc.</p> <p>Showed sufficient progressive evidence of working process</p>	<p>C 10-14%</p>
<p>Completion of the 3D scene with level of details</p> <p>Texturing and UVW map</p> <p>Quality of space with good compositions and relevant site context</p> <p>WIP evidence</p>	<p>Minimal level of details and work quality in overall production.</p> <p>Did not apply/ Out of scale texture and UVW mapping</p> <p>Failed to show the quality of space with appropriate compositions, with relevant context such as landscaping, human figures &amp; etc.</p> <p>Showed very little progressive evidence of working process</p>	<p>D 5-9% (F if failed to show all criteria)</p>

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## Appendix 1

The following table shows descriptions for Level of Development in BIM.

<b>LOD 100</b>	<i>Conceptual Design and Master Planning.</i> Creating mass models for the concept stage. Volumes, height, location and orientation, basic building analysis etc. This model can be quickly and easily be analyzed for energy consumption to help make design changes and approval for design options.
<b>LOD 200</b>	<i>Schematic Design/Design Development.</i> Developing the general assemblies, rough sizes and placement of rooms etc. Here you have the general idea on the design but do not have the specific information on exact wall assemblies or component types. This LOD is typically the basis for the working drawings.
<b>LOD 300</b>	<i>Working Drawings, Shop Drawings,</i> construction documentation, building analysis, shop drawings etc. Not everything needs to be modeled during this level of development, you can place in your model placeholders which can be specified in the Spec documentation outside of the Building model.
<b>LOD 400</b>	<i>Fabrication and Assembly</i> typically not achieved by the Designer or Architect as this level of detail is typically required by fabricators, for example manufacturers of RTU's would detail their components at this level for fabrication of their components.
<b>LOD 500</b>	<i>As Built Model, Maintenance and Operations,</i> the final level of detail that represents the true building. Ideally used for building operations and maintenance. Typically includes extensive information within the model on each component, for example a light fixture may have the wattage, warranty information, the suppliers contact info, model number etc...

Source: <http://bim4scottc.blogspot.com/>