

# INFO: BIM, CAD and Information Technology 5

Module Title:         BIM, CAD and Information Technology 5           Language of Instruction:         English           Credits:         5           Structure:         7           Modulo Dolivered IV         2 programme(s)           Tacking & Lamming Group Structure:         7           Tacking & Lamming Group Structure:         Structo-based provides & protein-based learning to dovelog the learner: provides and provides and provide structure in technology context with one-to-one reviews/building and group/class ton'ts to provide struction in ReviewBin/Bin/Scaga2d, Ph/NENSap2GG, Ph/NENSap2GG, Ph/NENSAPCG, Ph/SCAP           Module Alim::         The sime of this module are: * To assist learners in understanding the relating to from tutilized to provide the provide structure in technology of understanding information or design of Ph/SCAP           Module Alim::         The sime of this module are: * To assist learners in understanding the relating information modeling (BM) into Studie of Projects. * To enhance elevations and pins using Ph/Stohop's layer syle effects * To use Enscape3d to proveentation and written specification * To integrate building information modeling (BM) into Studie of Projects. * To enhance elevations and pins using Ph/Stohop's layer syle effects * To use Enscape3d to Projects. * To enhance elevations and pins using Ph/Stohop's layer syle effects * To use Enscape3d to Projects. * To enhance elevations and pins using Ph/Stohop's layer syle effects * To use Enscape3d to Projects. * To enhance elevations and pins using Ph/Stohop's layer syle effects * To use Enscape3d to Projects. * To enhance elevations and pins using Ph/Stohop's layer syle effects * To use Enscape3d to Projects. * To		~~	C University
Credits:       5         Order       7         Module Delivered In       2_programme(s)         Tracking & Learning       Studio-based projects & problem-based learning to develop the learners' problem-solving methodology to an architectural technology context, with one-to-one reviews/tutorials and group/class oris's to provide student feedback - Group/team work utilised as appropriate - Lecture format utilised to provide the certextic antiruction in RevUNIDHESEspace3a/Enholespace3a Studiae tools + Formative assessment, given through one-to-one reviews/tutorials and group/class oris's & reviews - Studured the studiae tools on reviews/tutorials and group/class for the studeway deliver. To assist teamers in understanding the relative & compliancing each use tools assessment, involving allocation of marking is for - Final dramage, delials, specifications & visualization         Module Aim:       The alms of this module are: - To assist teamers in understanding the relative & compliancing uses of the projects To enhance elevations and plans using Photoshop's layer style effects To use Enscape3d to create hyper-realistic 3D visual/azions of your designs. 3d render packages are subject to change depending on availability in the market         Conducts of BiM models to Forduce fully delated working Architectural drawings, Create 3d design visualisations of building of medium complexity. Tocusing on the highest professional standards.         Core to plane, elevations, asembles where applicable.         Core to plane, elevations, asembles where applicable.         Core to plane, elevations, asembles where applicable.         Core advanced modeling techniques and sustatinable design strategies to construct and	Module Title	9:	BIM, CAD and Information Technology 5
NFQ Level:         7           Modulo Delivered In         2 programme(s)           Strategies:         Studio-based projects & problem-based learning to develop the learners' problem-solving methodology to an advanced revel, an an achitectural learning to develop the learners' problem-solving methodology to an advanced revel, an an achitectural learning to develop the learners' problem-solving methodology to an advanced revel, and advanced revel, and advanced revel, the fondology context, with one-to-one reviews/tubrals and group/class crits' & reviews - Structured marking of projects as continuous assessment, involving allocation of marks for: - Final drawing, details, appeditations & visualization           Module Alm:         The aims of this module are: - To assist learners in understanding the relative & complianetary uses of the presentation and writers specification - To integrate building information modelling, (ki) into Studio presentation and writer specification - To integrate building information modelling (ki) into Studio depending on availability in the market           Larning Outcomes         On successful completion of this module the learner should be able to:           L01         Use more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of market and they are list of this module, sections, live callout details, 3D details, 3D views, scheduke, legends of building components and and its spaces and show a variety of design of points. "Create 2d and 3D details fully montaled, using additable, and sasembles where applicable.           L03         Introduce are used and energy systems into BiM models and evaluate different building of method is anadyses of your models. anadyses packages are subject t	Language o	of Instruction:	English
Module Delivered In         2 programme(s)           Teaching & Learning         Studio-based projects & problem-based learning to develop the learners' problem-solving methodology to an architectural technology context, with one-to-one reviews/tutorials and group/class crist's to provide student feedback - Groupteam work utilised as appropriate - Lecture format utilised to provide the develop the intruction in ReviewBIM/Encape2de 2d-Photoshop/Cd as Outware tools - Formative assessment given through one-to-one reviews/tutorials and group/class crist's (reviews - Structured maying, obtained tools - Formative assessment given through one-to-one reviews/tutorials and group/class crist's (reviews - Structured maying, obtained tools at the relispeal, including manual and Cad drawing, 2D/Rwit BIM modeling, advanced Projects. To enhance elevations and plans using Photoshop's taylored as the relistive assessment involving allocation of marks for: - Final drawing, obtained tools at the relisto so your designs.3d render packages are subject to change depending on availability in the market           Learning Outcomes         If we more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of market so or on availability in the market           L01         Use more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of markets of the market and all references are dynamic and coordinated. Create 2d and 30 detains, 100 views, eshoutable, legnda et allout views ensuing that they are lied basing and its spaces and show a variety of design optionsCreate 2d and 30 detains, 100 views, eshoutable, legnda et allou views ensuing that they are lied its approxing. Create 3d and 30 detains and view and allow give and exaltable the sequence in which MEP sorties and all references are dyna	Credits:	5	
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Teaching         Studio-based projects & problem-based learning to develop the learners' problem-solving methodology to an avanced level, in an architectural technology context, with one-to-one reviews/tutorials and group/class 'ortis' to provide student feedback - Groupsteam work utilised as appropriate - Lecture formal utilised to group/class 'ortis' to provide theoretical instruction in Review10Mith/srsacpade/Group/Class United Formative Context Formalive End Stateware tools - Final drewings, Cleanis, specifications & visualization           Module Aim:         The aims of this module are: - To assist learners in understanding the relative & complimentary uses of the marking of projects To the aims of a plan sung Photoshop Signey Glass, State ender packages are subject to change depending on availability in the market           Learning Outcomes         The aims of this module are: - To assist learners in understanding the relative & complimentary uses of the market           Long         Create plans, elevations and plans using Photoshop Signey Signey Glass, State S		I`	
Strategies:       an advanced (evel, in an architectural technology context, with one-to-one rows/tutionals and group/class in the search of the provide theoretical instruction in Revit/BIM/Enscape3d /Photoshop/Cad software tools - Formative assessment (provides so continuous assessment, involving allocation of marks for: - Final drawings, details, specifications 44 visualization         Module Alm:       The aims of this module are: • To assist learners in understanding the relative & complimentary uses of the major tools at their disposal, including manual and Cad drawing. 3D/Revit BIM modelling, advanced presentation and written specification 54 visualization.         Module Alm:       The aims of this module are: • To assist learners in understanding the relative & complimentary uses of the major tools at their disposal, including manual and Cad drawing. 3D/Revit BIM modelling, advanced presentation and written specification 7 to integrate building information modelling (BIM) into Studio Projects. • To use Enscape3d to creat hyper-relatics 2D visualizations of your designs.3d render packages are subject to change depending on availability in the market         Learning Outcomes       On successful completion of fits module the learner should be able to:         L01       Use more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of medium complexity, focusing on the highest professional standards.         L02       Create plans, elevations, sections, live callout details, 3D details, 3D views, schedules, legends of building components and callouts of BIM models in a valuate detailed energy analysis of BIM models in the value design strategies to construct and evaluate different building different visualizations of youre models and evaluat	Module Deli	ivered In	2 programme(s)
major tools at their disposal, including manual and Cad drawing, 3D/Revit BIM modeling, advanced presentation and written specification - To integrate building information modelling (BIM) into Studio Projects To enhance elevations and plans using Photoshop's layer style effects To use Enscape3d to create hyper-realists 2D visualizations of your designs.3d render packages are subject to change depending on availability in the market         Learning Outcomes       Image: Completion of this module the learner should be able to:         L01       Use more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of medium complexity, focusing on the highest professional standards.         L02       Create plans, elevations, sections, live callout details, 3D details, 3D views, schedules, legends of buildings on buildings and its spaces and show a variety of design optionsCreate and manage live defail callout views ensuring that they are tied parametrically to sheets and all references are dynamic and coordinatedCreate 2d and 3D details fully annotated, using details, aparts, and assemblies where applicable.         L03       Introduce mechanical, electrical and plumbing (MEP) systems into BIM models. ESVE to create conceptual and detailed energy analysis of your models. analysis packages are subject to change depending on availability in the market.         L04       Use Revit tools to import and export a wide range of information with other applications. Dwg files, pfl and jpeg images etc. Extract entourage objects from photographs and use here in architectural fluxtrations, renderings, plans and elevations.         L04       Use Revit tools to import and export a wide range of information with other applications.		Learning	an advanced level, in an architectural technology context, with one-to-one reviews/tutorials and group/class 'crits' to provide student feedback • Group/team work utilised as appropriate • Lecture format utilised to provide theoretical instruction in Revit/BIM/Enscape3d /Photoshop/Cad software tools • Formative assessment given through one-to-one reviews/tutorials and group/class 'crits' & reviews • Structured marking of projects as continuous assessment, involving allocation of marks for: - Final drawings, details,
On successful completion of this module the learner should be able to:         LO1       Use more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of medium complexity, focusing on the highest professional standards.         LO2       Create plans, elevations, sections, live callout details, 3D details, 3D views, schedules, legends of building components and callouts of BIM models to Produce fully detailed working Architectural drawings. Create 3d design visualisations of buildings and its spaces and show a variety of design options. "Create and manage live detail callout views ensuring that they are tied parametrically to sheets and all references are dynamic and coordinated. Create 2d and 3D details fully annotated, using details, parts, and assemblies where applicable.         LO3       Introduce mechanical, electrical and plumbing (MEP) systems into BIM models and evaluate the sequence in which MEP services are used. Evaluate onsite energy systems and create detailed energy analysis of BIM models. IESV to create conceptual and detailed energy analysis of your models. analysis packages are subject to change depending on availability in the market.         LO4       Use Revit tools to import and export a wide range of information with other applications. Dwg files, pdf and jpeg images etc. Extract entourage objects from photographs and use them in architectural illustrations, renderings, plans and elevations.         LO5       Setup and manage a BIM collaborative environment and run clash detection to immediately see conflicts among architectural, and mechanical components. Navisworks to be explored for Clash Detection         This is prior learning (or a practical skill) that is recommended before enrolment in this module	Module Aim		major tools at their disposal, including manual and Cad drawing, 3D/Revit BIM modelling, advanced presentation and written specification • To integrate building information modelling (BIM) into Studio Projects. • To enhance elevations and plans using Photoshop's layer style effects. • To use Enscape3d to create hyper-realistic 3D visualizations of your designs.3d render packages are subject to change
LO1         Use more advanced modelling techniques and sustainable design strategies to construct and evaluate different building of medium complexity, focusing on the highest professional standards.           LO2         Create plans, elevations, sections, live callout details, 3D divers, schedules, legends of building components and callouts of BIM models to Produce fully detailed working Architectural drawings. Create 3d design visualisations of buildings and its spaces and show a variety of design options. "Create and manage live detail callout views ensuring that they are tied parametrically to sheets and all references are dynamic and coordinated. Create 2d and 3D details fully annotated, using details, parts, and assemblies where applicable.           LO3         Introduce mechanical, electrical and plumbing (MEP) systems into BIM models and evaluate the sequence in which MEP services are used. Evaluate onsite energy systems and create detailed energy analysis of BIM models. IESVE to create conceptual and detailed energy analysis of your models. analysis packages are subject to change depending on availability in the market.           LO4         Use Revit tools to import and export a wide range of information with other applications. Dwg files, pdf and jpeg images etc. Extract entourage objects from photographs and use them in architectural illustrations, renderings, plans and elevations.           LO5         Setup and manage a BIM collaborative environment and run clash detection to immediately see conflicts among architectural, structural, and mechanical components. Navisworks to be explored for Clash Detection           Pre-requisite learning         Module Recommendations           This is prior learning outcomes that are too similar to the learning outcomes of this mod	Learning Ou	utcomes	
medium complexity, focusing on the highest professional standards.       Intervention of the term of term of the term of term	On successf	ful completion of t	his module the learner should be able to:
callouts of BIM models to Produce fully detailed working Architectural drawings. Create 3d design visualisations of buildings and its spaces and show a variety of design options. «Create and manage live detail callout views ensuring that they are tied parametrically to sheets and all references are dynamic and coordinated. Create 2d and 3D details fully annotated, using details, parts, and assemblies where applicable.         LO3       Introduce mechanical, electrical and plumbing (MEP) systems into BIM models and evaluate the sequence in which MEP services are used. Evaluate onsite energy systems and create detailed energy analysis of BIM models. ISCVE to create conceptual and detailed energy analysis of your models. analysis packages are subject to change depending on availability in the market.         LO4       Use Revit tools to import and export a wide range of information with other applications. Dug files,pdf and jpeg images etc. Extract entourage objects from photographs and use them in architectural illustrations, renderings, plans and elevations.         LO5       Setup and manage a BIM collaborative environment and run clash detection to immediately see conflicts among architectural, and mechanical components. Navisworks to be explored for Clash Detection         Pre-requisite learning       Module Recommendations         This is prior learning (or a practical skill) that is recommended before enrolment in this module.         No incompatible modules listed         Modules time dulues listed         Requirements         These are modules listed         Requirements         This is prior learning (or a practical skill) that is mandatory before enrolment	LO1		
services are used. Evaluate onsite energy systems and create detailed energy analysis of BIM models. IESVE to create conceptual and detailed energy analysis of your models. analysis packages are subject to change depending on availability in the market.         LO4       Use Revit tools to import and export a wide range of information with other applications. Dwg files, pdf and jpeg images etc. Extract entourage objects from photographs and use them in architectural illustrations, renderings, plans and elevations.         LO5       Setup and manage a BIM collaborative environment and run clash detection to immediately see conflicts among architectural, structural, and mechanical components. Navisworks to be explored for Clash Detection         Pre-requisite learning       Module Recommendations         This is prior learning (or a practical skill) that is recommended before enrolment in this module.         No recommendations listed         Incompatible Modules         These are modules which have learning outcomes that are too similar to the learning outcomes of this module.         No incompatible modules listed         Co-requisite modules listed         Requirements         Requirements         This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.	LO2	callouts of BIM and its spaces a parametrically to	models to Produce fully detailed working Architectural drawings. Create 3d design visualisations of buildings and show a variety of design options. •Create and manage live detail callout views ensuring that they are tied o sheets and all references are dynamic and coordinated. Create 2d and 3D details fully annotated, using
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Learners must have successfully completed BIM in (both BIM 3 & BIM 4)			ctical skill) that is mandatory before enrolment in this module is allowed.
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### **Module Content & Assessment**

#### Indicative Content

#### **REVIT / Building Information Modelling**

Use Revit/BIM and sustainable design strategies to produce and prepare buildings of medium complexity, focusing on the highest professional standards.

#### BIM Customisation of Systems, Families and Project Settings

• (a) Create advanced modelling elements: Covering the following topics; grids & levels, walls, ceilings, floors, windows, doors, foundations and piling, beams and truss systems, stairs, ramps and railings; advanced modelling features. Curtain walls. (b) Advance design techniques. Roofs and slabs: advance shape editing. (c) Project phases, worksets, filters and design options.(d) Create, modify and save view templates and load them into projects. (f) Massing families, in-place massing, form manipulation, terrain modelling, analysing the building concept. (g) Export Revit models in forms that others can read and how to import information that is relevant to their projects from other sources. Covering the following topics; exporting, importing and linking, working with imported files, working with 3d DWG files, and starting a drawing from a scanned image file. (h) Room definition and boundary elements, room schedules, room area and volume, colour schemes and

**Detailing Techniques and Sustainable Design** (a) live callout detail views use annotation tools and component categories, detail component libraries, repeating details, lines and arc, text, tags and keynotes. (b) Create perspective 3D sectional views that slice through the model, providing stunning graphics that can help better explain plans, sections, details and 3D in one view. (c) Incorporating a sustainable design approach from the beginning, leverage schedules to track sustainable design strategies. (d) Generate an animated solar study that can show the effect of shadows over time, throughout the year. (f) IESVE to create conceptual and detailed energy analysis of your models. analysis packages are subject to change depending on availability in the market

#### Create Professional-quality Construction Documentation

(a) Create sheets, views, Browser organisation, annotation, tags, schedules, legends, sections, 3D sections, elevations, details and keynotes. (b) Creating and populating sheets, working with schedules and legends, publishing and document management. (c) Create material finishes from digital images using real world scale. (d) Render real-surfaces with architectural materials.(e) revisions on sheets ,scope boxes

#### Mechanical, Electrical and Plumbing (MEP)

(a) Link model into MEP templates, setup project standards. (b) HVAC heating and cooling, ductwork, piping, lighting, power and communications, mechanical systems, electrical systems and circuits, plumbing systems and fire protection

#### Enscape3d / Vrav / Blender / Unity

(a) Export Revit models, and link the file into Enscape3d or Vray so that you can create more advanced rendering, and setup animated walk- throughs. (b) Simulate lighting effects accurately with global illumination. (c) Use Enscape3d, Vray, Lumion & Blender 3d render packages are subject to change depending on availability in the market

#### Navisworks

Import and manage your BIM model in Navisworks, setup rules for object and geometry and combine 3d models and review, run clash detection on your models.

Assessment Breakdown	%
Project	100.00%

No Continuous Assessment

Project				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Thesis Project	1,2,3,4,5	100.00	Sem 2 End
No Practical				

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



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### Module Workload

Workload: Full Time		
Workload Type	Frequency	Average Weekly Learner Workload
Lecture	12 Weeks per Stage	2.00
Tutorial	12 Weeks per Stage	2.00
Estimated Learner Hours	12 Weeks per Stage	6.50
	Total Hours	126.00

Module Delivered In				
Programme Code	Programme	Semester	Delivery	
CW_CMARC_B	Bachelor of Science (Honours) in Architectural Technology	6	Mandatory	
CW_CMART_D	Bachelor of Science in Architectural Technology	6	Mandatory	