

<b>Title:</b>	Passive House Design 1 <b>APPROVED</b>
<b>Long Title:</b>	Passive House Design 1
<b>Module Code:</b>	ARCH8025
<b>Credits:</b>	5
<b>NFQ Level:</b>	Advanced
<b>Field of Study:</b>	Architecture & Urban Environment
<b>Valid From:</b>	Semester 1 - 2015/16 ( September 2015 )
<b>Module Delivered in</b>	<a href="#">2 programme(s)</a>
<b>Module Coordinator:</b>	KATHERINE KEANE
<b>Module Author:</b>	MARC O RIAIN O RIAIN
<b>Module Description:</b>	Passive house design & planning
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Apply the principles of passive house design and passive retrofit
LO2	Effectively use the Passive house software planning package
LO3	Calculate the role and application of heat gain and climate on building performance
LO4	Calculate the application of mechanical ventilation heat recovery and air tightness on building performance
LO5	Calculate the impact of infiltration and air change within low energy building design
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b>	
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	
<b>Incompatible Modules</b>	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b>	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
No requirements listed	
<b>Co-requisites</b>	
No Co Requisites listed	

**Module Content & Assessment**

**Indicative Content**

**Passive House Design Theory and Principles**

Passive House Design 1 will explore the theory and principles of Passive House Design and the Passive House approach to the design, construction and operation of buildings including the following building issues; Passive house design and planning, Passive House envelopes/Building Envelope, Air Tightness, Thermal Bridge free construction, Passive House Windows, Tender stage Issues for Passive House Design, Site Supervision and quality assurance, Practical implementation of Passive House Design, Heat Fundamentals for Architects and designers, Heat Generation Distribution, Heat Distribution Losses, Passive House and Economics, Energy Balance

**Assessment Breakdown**

	%
Course Work	50.00%
End of Module Formal Examination	50.00%

**Course Work**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Software application assignments	1,2,4,5	25.0	Every Second Week
Practical/Skills Evaluation	Passive House exercises	1,3,4,5	25.0	Every Second Week

**End of Module Formal Examination**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End-of-Semester Final Examination	1,2,3,4,5	50.0	End-of-Semester

**Reassessment Requirement**

**Repeat examination**

Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

The institute reserves the right to alter the nature and timings of assessment

**Module Workload**

**Workload: Full Time**

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Theory: Passive House Design	1.0	Every Week	1.00
Tutorial	Practicals: Passive House Design Principles and Application	1.0	Every Week	1.00
Tutorial	Software: Passive House Softwares	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	Assignment completion and software application	4.0	Every Week	4.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				3.00

**Workload: Part Time**

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Theory: Passive House Design	1.0	Every Week	1.00
Tutorial	Practicals: Passive House Design principles and Application	1.0	Every Week	1.00
Tutorial	Software: Passive House Softwaree	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	Assignment completion and software application	4.0	Every Week	4.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				3.00

Module Resources
Recommended Book Resources
<ul style="list-style-type: none"> <li>• Irish Passive House Academy 2012, <i>Certified Passive House Designer</i>, 1</li> <li>• Sarah Lewis 2014, <i>PHPP Illustrated: A Designer's Companion to the Passive House Planning Package</i>, RIBA Publishing London [ISBN: 978-185946540]</li> <li>• Janet Cotterell and Adam Dadeby 2012, <i>The Passivhaus Handbook: A practical guide to constructing and retrofitting buildings for ultra-low energy performance (Sustainable Building)</i>, Green Books [ISBN: 978-085784019]</li> <li>• Rainer Vallentin (Editor), Roberto Gonzalo (Editor) 2014, <i>Passive House Design: A Compendium for Architects (Detail Green Books)</i>, Edition Detail [ISBN: 978-395553220]</li> <li>• W Feist, <i>What is a passive house</i></li> <li>• Christina J. Hopfe (Editor), Robert S. McLeod (Editor), <i>The Passivhaus Designer's Manual: A technical guide to low and zero energy building</i></li> </ul>
Recommended Article/Paper Resources
<ul style="list-style-type: none"> <li>• W Feist, J Schnieders, V Dorer, A Haas <i>Re-inventing air heating: Convenient and comfortable within the frame of the Passive House concept</i></li> </ul>
Other Resources
<ul style="list-style-type: none"> <li>• WEB PORTAL: Passive House Association of Ireland <i>PASSIPEDIA WEB PORTAL (Licence)</i></li> </ul>

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_CARCT_9	<a href="#"><u>Master of Science in Architectural Technical Design</u></a>	1	Elective
CR_DINAR_9	<a href="#"><u>Master of Science in Interior Architecture</u></a>	1	Elective