LONDON SOUTH BANK UNIVERSITY

Module guide

Architectural Design and Technology

EBB/4/060 v2

School of the Built Environment and Architecture

Division of Construction, Property and Surveying

become what you want to be

BSc (Hons) Architectural Technology + BSc (Hons) Architectural Engineering

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1.0 MODULE DETAILS

Module Title:	Architectural Design and Technology
Module Level:	4
Module Reference Number:	EBB/4/060
Credit Value:	20 CAT points
Contact Hours:	40
Directed Learning Hours:	
Student Managed Learning Hours:	160
Total Hours:	200
Pre-requisite Learning (If applicable):	None
Co-requisite Modules (If applicable):	None
Module Coordinator:	Carlos González
Course(s):	BSc (Hons) Architectural Technology BSc (Hons) Architectural Engineering
Year and Semester	2019-2020 Semester Two
UC Contact Details (Tel, Email, Room)	gonzalcb@lsbu.ac.uk Room T511, Tower Block.
	Tel ext. 7110
Module Tutors	Carlos Patricio Gonzalez gonzalcb@lsbu.ac.uk Room T511, Tower Block.
Subject Area:	
Summary of Assessment Method:	Critique presentations, report, set of paper plans and Digital portfolio

2.0 INTRODUCTION

This technology studio module is central to the Architectural Technology and Architectural Engineering degrees programme. In this module, you will carry out the sort of tasks you are likely to be asked to perform when employed as an architectural technologist or engineer in the construction industry. The learning process in this module of study is associated with a residential design project and the teaching is in the form of keynote lectures and graphic (3D CAD) software lessons, studio discussion, design and technology tutorials, and critiques.

3.0 AIMS OF THE MODULE

- To examine the course of architectural development over the 19th and 20th centuries, to investigate the legacy of pioneer architectural practitioners, and to play a role in developing the future of architectural form into the 21st century.
- To acquire knowledge of relevant standards and design guidelines, and to understand the purpose of architectural, engineering and construction drawings and 3D modelling.
- To learn to produce 2-D and 3D drawings using a AutoCAD or Revit CAD system, and to acquire an ability to convert measurements and data into architectural models and construction drawings using CAD systems.

4.0 LEARNING OUTCOMES

4.1 KNOWLEDGE & UNDERSTANDING OF DESIGN PRINCIPLES

On completion of this area of work, the student will:

- have acquired a broad knowledge of the history and theory of architecture and building engineering;
- understand the principles of architecture and design;
- understand the role of Building Control (and the Approved Documents) in the construction process;
- working from architectural precedents, be able to develop a construction project, including site analysis, to produce design drawings to the planning stage and working drawings for Building Control level appraisal;
- understand units of measurement and scales;
- understand Ordnance Survey (Digi-map) maps and plans and their use in construction data.

4.2 CAD SYSTEMS:

On completion of this area of work, the student will:

- understand units of measurement and scales in CAD drawings;
  have developed a broad knowledge of basic 2-D and 3D CAD REVIT drawing;
- be capable of developing a set of working drawings for a domestic design project.

4.3 INTELLECTUAL SKILLS:

Students will develop their intellectual skills such that they are able to:

- demonstrate knowledge and understanding of facts, concepts, principles and theories;
- develop creative and innovative solutions;
- make informed judgements based upon evidence;
- apply knowledge and understanding in solving qualitative and quantitative problems;
- evaluate and interpret technological information;
- undertake research and obtain and evaluate data.

4.4 PRACTICAL SKILLS:

Students will acquire and develop their practical skills such that they are able to:

- use Information Technology to support intellectual skills;
- produce quality design presentations to a variety of media;
- prepare technical drawings, reports and specifications;
- use the library, the Internet, and other information sources effectively;
- manage projects efficiently.

4.5 TRANSFERABLE SKILLS

Students will acquire and develop transferable skills such that they are able to:

- effectively communicate in oral presentations, reports and drawing;
- apply mathematical skills;
- use Information Technology;
- work effectively as a member of a team;
- manage time and work to deadlines;
- evaluate and improve own learning and performance;
- use a variety of skills in problem solving.

4.6 EMPLOYABILITY

This unit develops skills in applying the principles of design and CAD skills

5.0 INTRODUCTION TO STUDYING THE MODULE

5.1 MAIN CONTENT

Based on the existing plans of a project by a well-known architect you are asked to design a small-scale housing scheme (homeless people). You are required to develop this design proposal by placing three units of this accommodation in the context of a site. The three dwellings units must be integrated into one building.

5.2 OVERVIEW OF CLASS TYPES

The model of teaching is studio base tutorials, presentations and critique presentations + CAD 2D / REVIT Lab workshops.

5.3 STUDIO CRITIQUES

On the day of a critique, your project work has to be finished as PowerPoint or PDF files for OHP presentation and/or pinned up before the lesson starts. If it is not ready to be assessed at the time, it will be considered late and will receive a maximum mark of 40%. We aim to assess your work and give you a feed back within 15 working days of the work being handed -in. All Digital submissions are on-line to Moodle

5.4 IMPORTANCE OF STUDENT SELF-MANAGED LEARNING TIME

Studio base tutorials and presentations are important part of the process of learning and are to be used to clarify and coordinate the development of your project. Most of the design work, research and drawing assignments will be done on your own self-managed time.

6.0 THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

6.1 TEACHING AND LEARNING PATTERN

Class contact consists of

1) formal lectures on Design Principles (1hour per week x 3 weeks)
2) formal lectures and practical lab work for 3D CAD / REVIT (2 hours per week x 4 weeks),
3) Design project studio tutorials (3 hours a week x 8 weeks).

Some learning outside of the classroom as directed learning.

6.2 INDICATIVE CONTENT

The 3-lecture cycle will deal with architectural development over the 19th and 20th centuries, the legacy of great pioneer architectural practitioners and the future of architectural form in the 21st century.

4 basic design and technology lessons to develop plans and elevations for a domestic design project. All must be translated to 2D/3D CAD

A domestic Architectural Design project.

6.3 ASSESSMENT

The unit is assessed by:

1) Group seminar presentation. Site analysis and Arch. Precedent (25%). Architecture precedent: 3D model in Revit Architecture. .
2) Group design project (75%) + Individual tasks within groups
Direct field work assessment during the practical's and group design project presented as assignment to include all practical measurements, calculations and drawings; Critique Presentation and Portfolio.

COMPONENT	WEIGHTING	MINIMUM COMPONENT MARK
Seminar presentation	25%	Not applicable
Design project	75%	Not applicable
The minimum unit pass mark is 40%		

Note: Any student without the necessary knowledge of CAD 2D and /or REVIT will need to attend CAD 2D and REVIT workshops on Tuesdays or Wednesdays afternoon-evenings according with level. Ask tutor for more information.

6.4 KEY DATES

FIRST DATE IN THE WEEK IS FOR ARCHITECTURAL TECHNOLOGY STUDENTS (IN BLUE) AND **SECOND DATE IN THE WEEK IF FOR ARCHITECTURAL ENGINEERING STUDENTS (IN RED)**

28th & 31st Jan 2020 W1	Project hand-out and briefing Work teams planning. Site location and investigation.
04th & 07th Feb 2020 W2	Tutorials Site Analysis Site visit (today or following week) (*)
11th & 14th Feb 2020 W3	Tutorials Architectural Precedent + Spatial form CAD 2D Tutorials workshops 1 (*)
18th & 21st Feb 2020 W4	Tutorials Spatial form CAD 2D Tutorials workshops 2 (*)
25th & 28th Feb 2020 W5	**Interim group Seminar presentations (1)** Task 1: Site analysis & Architectural precedent study. **PowerPoint** presentation in 30 slide Frames. Spatial form / Integrate 3 Housing units into one prototype building. Group Presentation. (25% mark) (**Online submission 9th March 20.00h**)
03rd & 06th Mar 2020 W6	Digital Tutorials on Spatial Form Technical analysis / external and internal details. (Online material) Or: Visit to **Future-build**: **03-05 March 2020 / ExCeL, London, Tue & Wed 10:00 – 18:00, Thu 10:00 – 16:00**2 ExCel Docklands http://www.ecobuild.co.uk/ (Compulsory)
10th & 13th Mar 2020 W7	Tutorials & Technical analysis / external and internal
17th & 20th Mar 2020 W8	Tutorials Technical analysis / external and internal

24th & 27th Mar 2020 W9	**Interim individual presentations**. **(2)** Task 2: Construction strategies. Interim group presentations of Base Drawings + Model Technical analysis / external and internal walls, roof, & stairs **on individual work basis** within the group. 1:100 & 1:50 Drawings + PP slides (25% mark) (6) (Online submission 8 April 2020)
31st Mar/ 03rd Apr 2020 W10	Tutorials Synthesis / Construction strategies Tutorials Technical analysis, Synthesis / Construction strategies CAD REVIT Tutorials workshops 1 (*)
Week 06th Apr 2020	Easter Vacation
Week 13th Apr 2020	Easter Vacation
Week 20th Apr 2020	Easter Vacation
28th Apr/ 01 May 2020 W11	Tutorials Technical analysis, Synthesis / Construction strategies CAD REVIT Tutorials workshops 2 (*)
05 & 08 May 2020 W12	**Final presentations (3)** Task 3 Synthesis / Construction strategies PP Slide presentation of Site Analysis, etc. Final proposal plans, sections and elevations (Scale 1:50 prints) presented as group work. Production Information Details (2) Drawings at 1:5 and 1:10 scale (25% mark/crit)
12th & 15th May 2019 W13	TUTORIALS
29th May 2019	**Submission of Portfolio project (Online Moodle) (4)**

Submission of project Digital Individual Portfolio including final written report + Group work A3/A1 portfolio (25% mark)(1 paper copy) (School Office)

7.0 ASSESSMENT OF THE MODULE

7.1 GRADING SYSTEM

Assessment Method:

Elements:

A	Project based assessment consisting of PowerPoint Group Seminar Presentation Site analysis and Architectural Precedent.
B	Individual Digital Portfolio of work drawings and individual and group project work from conceptual sketches to finished scheme in Digital Format and A3/A1 Portfolio format, plus report 3000 words.
.	Continual assessment structured (presentations, critiques and workshop work)(Attendance will be monitored).

Weighting:	A	25%
	B	75%

Minimum Element Pass: n/a
Minimum Unit Pass: 40%

Grading System (grades):

The following is an indication of the relevance of grades:

80 – 100% AA
Outstanding piece of work in every respect.

70 – 79% A
Outstanding in most respects. Represents a comprehensive and competent coverage of issues plus evidence of originality and flair. A creative response.

60 – 69% B
The work is complete, and the brief fully complied with, represent and overall competence and willingness to tackle more advanced aspects of the problem.

50 – 59% C
Represents an average interpretation of the brief, mostly competent and not seriously lacking in any aspect with some reflective thinking. Some areas under-developed.

40 – 49 D
Represents a pass, an attempt to address all aspects of the brief but falling in one or more areas to achieve a reasonable level of understanding and performance.

35 – 39 E
Failure. Evidence of latent ideas but potential has been underdeveloped. Work unfinished and /or brief not fully complied with.

0 – 34 F

Failure. Work shows a lack of understanding of most of the key issues involved and /or indicates a lack of a serious attempt at complying with the brief and /or a very poor presentation.

8.0 LEARNING RESOURCES

8.1 CORE READING

McLean W, Silver P, (2013) (Second Edition) **Introduction to Architectural Technology**, Laurence King Publishing.

Edwin H. Gaylord, Charles N. Gaylord, and James E. Stallmeyer, (1996) **Structural Engineering Handbook**, McGraw-Hill Professional (4th edition).

Guzowski M,(2012) **Towards Zero-Energy Architecture**, Laurence King Publishing.

Randall Thomas, (2006), **Environmental Design, An introduction for Architects and Engineers.** , (3rd edition), London ; New York : Taylor & Francis

E-Book
c2006

Environmental design [electronic resource] : an introduction for architects and engineers / edited by Randall Thomas
London ; New York : Taylor & Francis, c2006.
3rd ed.
Access this ebook.

Liebins R.W. (1999) **Architectural Working Drawings** (4th Edi.) NY,Chichester. John Wiley and Sons.

Or Alternatively:

E-Book
2011

The professional practice of architectural working drawings [electronic resource] / Osamu A. Wakita, Nagy R. Bakhoum, Richard M. Linde
Wakita, Osamu A.
Hoboken : Wiley, 2011.
4th ed.
Access this ebook.

Sassi Paola, (2015), Strategies for Sustainable Architecture. , (1st edition),Oxford; New York: Taylor & Francis Group, 2015.

E-Book
2015

Strategies for sustainable architecture [electronic resource] / Paola Sassi
Sassi, Paola, 1964-
London ; New York : Taylor & Francis Group, 2015
Access this ebook.

Moffett M, Fazio M, Wodehouse L, (2008) A World History of Architecture (2nd Edition), Laurence King Publishing.

Bridgewood B, Lennie L, (2008), History, Performance and Conservation (Technologies of Architecture) Taylor & Francis.

8.2 DESIGN DATA

Baden-Powell, Ch. (2011) (Fourth Edition), Architect's Pocket Book. Architectural Press, London.

E-Book 2011

Architect's pocket book [electronic resource] / Charlotte Baden-Powell
Baden-Powell, Charlotte, 1936-
Amsterdam ; Boston : Elsevier/Architectural Press, 2011.
4th ed. / updated by Jonathan Hetreed and Ann Ross.
Access this ebook.

Buxton, Pamela and others, (2018) (Fifth Edition), Metric Handbook ,Architectural Press, London. Pamela Buxton - 2018

E-Book 2012

Metric handbook [electronic resource] : planning and design data / [edited by] David Littlefield
London ; New York : Routledge, 2012.
4th ed.
Access this ebook.

8.3 OPTIONAL

Banham, R. (1962) Guide to Modern Architecture, Architectural Press, London

Banham, R. (1975) Age of Masters: A personal view of Modern Architecture, Architectural Press, London.

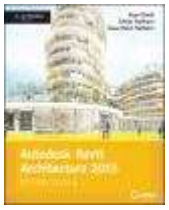
8.4 CAD

Omura G, (2015) Mastering AutoCAD (various)

E-Book
2014

Mastering AutoCAD 2015 and AutoCAD LT 2015 [electronic resource] / George Omura, with Brian Benton
Omura, George.
Indianapolis, Indiana : Sybex : Autodesk Official Press, [2014]
Access this ebook.

Duell, Ryan. Etc…(2014) Autodesk Revit Architecture 2015: Essentials



Autodesk Revit Architecture 2015 : essentials / Ryan Duell, Tobias Hathorn, Tessa Reist Hathorn
Duell, Ryan, author.
Access this ebook.

Autodesk Revit 2020 Architecture Basics

Elise Moss - 2019

or

E-Book
2014

Autodesk revit architecture 2015 [electronic resource] : no experience required / Eric Wing
Wing, Eric, 1970- author.
Access this ebook.

Doc.Upgraded: Jan 2020 CPG