London South Bank University

EST 1892

Module Guide

Analysis and Design

CSI_5_AAD

School of Engineering

Level 5

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1. MODULE DETAILS

Module Title:	Analysis and Design
Module Level:	5
Module Reference Number:	CSI_5_AAD
Credit Value:	1 Module (20 credits)
Student Study Hours:	200
Contact Hours:	65
Private Study Hours:	135
Pre-requisite Learning (If applicable):	None
Co-requisite Modules (If applicable):	None
Course(s):	BSc Information Technology
Year and Semester:	2018 - 19, Semester 1
Module Coordinator:	George Ubakanma
MC Contact Details (Tel, Email, Room):	020 7815 7403, ubakang@lsbu.ac.uk , FW200 (Faraday Wing)
Teaching Team & Contact Details:	None
(If applicable):	
Subject Area:	ISIT
Summary of Assessment Method:	Coursework: 60% Exam: 40%
External Examiner appointed for module:	Dr Ying Liang

2. SHORT DESCRIPTION

This module explores the techniques for systems analysis and design, divided mainly into four areas: traditional methodologies, agile methodologies, systems thinking methodologies and professionally recognized project management techniques.

3. AIMS OF THE MODULE

This module provides a theoretical understanding of, and practical competence in, the techniques of information systems analysis and design, building upon the knowledge of information systems development gained at level 4.

4. LEARNING OUTCOMES

The Learning outcomes map to CS2013 Body of Knowledge which is organized into a set of 18 Knowledge Areas (KAs), corresponding to topical areas of study in computing:

4.1 Knowledge and Understanding of:

- The characteristics, relevance and use of data modeling and process modeling techniques
- The characteristics, relevance and use of project management tools and techniques

Covers ACM (KAs): AL3-1, AL3-2, IM3-1, (SE2-1-SE4-2), SE51-1, SE5-2,

4.2 Intellectual Skills. To be able to:

- Compare and contrast the advantages and disadvantages of a range of systems life cycle models
- Discuss the relative merits of process, data and event based models

Covers ACM (KAs): (SE2-1-SE4-2), SE51-1, SE5-2, SP1-1, SP1-2, SP3-1, SP3-2

4.3 Practical Skills. To be able to:

- develop a range of appropriate models for requirements capture and systems design

Covers ACM (KAs): AL3-1, AL3-2, IM3-1, (SE2-1-SE4-2), SE51-1, SE5-2,(SE7-1 – SE8-1), SP3-2

4.4 Transferable Skills. To be able to:

- manage a project and prepare a professionally structured project report

Covers ACM (KAs): AL3-1, AL3-2, IM3-1, (SE2-1-SE4-2), SE51-1, SE5-2, SP1-1, SP1-2, SP3-1, SP3-2

5. ASSESSMENT OF THE MODULE

Coursework 60%: Exam 40%.

Coursework 60%
Typically, the coursework is a team assignment and will be based around a mini-case problem scenario. The accompanying written report documenting the design work undertaken will be approximately 3000-4000 words.
Covers ACM (KAs): AL3-1, AL3-2, IM3-1, (SE2-1-SE4-2), SE51-1, SE5-2,(SE7-1 – SE8-1), SP3-2

Exam 40%
Taken at the end of semester, is a 2 hour paper. Usually two in sections:

- Section A: (Compulsory) 1 question (40 marks)
- Section B: usually 4 questions (answer any 2 questions completely). Each complete question has a total of 30 marks allocated to it

Logbooks are allowed. No text books (or extracts) and no calculators allowed, university examination regulations apply.
Covers ACM (KAs): AL3-1, AL3-2, IM3-1, (SE2-1-SE4-2), SE51-1, SE5-2, (SE7-1 – SE8-1), SP1-1, SP1-2, SP3-1, SP3-2

Students are advised to keep a LOGBOOK containing lab based assignment related research and the weekly tutorial exercises for use as revision material for the exam. The logbook is not an assessed component.

6. FEEDBACK

Feedback will normally be given to students 15 working days after the final submission of an assignment or as advised by their module leader.
General feedback, applying to all students, will also be placed on the module VLE site within 15 working days.

7. INTRODUCTION TO STUDYING THE MODULE

7.1 Overview of the Main Content

- Review of traditional/contemporary design concepts
- Introduction to UML, Agile methodologies: RUP, SCRUM, V-Model, Extreme Programming, Soft Systems Methodology
- Data structure design concepts
- Process design concepts
- User Interface / User Experience
- Testing Concepts
- Introduction to professionally recognized project management methods: Prince2/PMP

7.2 Overview of Types of Classes

In general the contact time will be divided into a two hour lecture based presentation and a three hour student led tutorial.

- **Lecture:** Large group session (all tutorial groups combined), expect this to often be workshop based. Some lecturing, also use of videos & mini-exercises.
- **Tutorial Workshop:** One to one advice on tutorial exercises that you will have attempted individually. Assignment team meetings. Assignment support and advice from tutors. Lecture & Tutorial activities will be supported using the virtual learning environment

7.3 Importance of Student Self-Managed Learning Time

Student responsibility in the learning and development process will be emphasized. Students are required to undertake directed self-study and prepare solutions/discussions to questions relative to various topic areas. Students will be encouraged to identify for

themselves particular problems of difficulty and to use seminar discussions, where appropriate, for the resolution of these.
Students must regularly access the Virtual Lerening Environment (Moodle) site for this module. They should download the class/lecture material from the VLE site, and do the recommended reading, before each lecture/class.

Where appropriate, students are also expected to download the relevant seminar questions and study them in advance of each seminar, in order to derive maximum benefit from seminar time. The programme of teaching, learning and assessment gives guidance on the textbook reading required for each week, the purpose of which is to encourage further reading both on and around the topic.

7.4 Employability

The techniques used in the analysis and design of information systems are a key part of the skill set required in almost any career in computing and IT.

The business analyst will need these modelling techniques to understand and communicate systems requirements to the developers. The developers will need the analysis modelling toolkit in order to understand the requirements that form the specification they must work from.

8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

Week	Coursework etc.	Learning Programme	Reading
1		Introduction to the module & Methodologies: a comparative review	Ch 1, 8, 10
2		Project Management/Legal, Ethical, Social, Professional Issues; Big Data Methodologies	Ch 8, 9, 13
3		Workflow/ Behavioural based modelling: Use Cases & Activity Diagrams; Workflow Decomposition	Ch 2, 3, 5
4	Team Assignment contract completion	UML Class Diagrams. Complex behaviour in class diagrams	Ch 4, 12
5		State Machine diagrams	Ch 5,
6	Preliminary Research Team Presentations	Preliminary Research Team Presentations	
7		User Interface design (UI/UX) /	Ch 7
8		Sequence diagrams	Ch 5, 11
9		Component & Deployment diagrams	Ch 5, 11
10		Testing/Trustworthy Software	Ch 13
11	Team Assignment Submission	Workshop Session	
12	Final Team Presentations	Final Team Presentations	
	CHRISTMAS VACATION	*CHRISTMAS VACATION (3 wks)*	
13	Assignment Feedback	EXAM REVISION	
14/15		EXAM WEEKS	

Note: This schedule is for guidance only. Order of topics and their presentation dates may be altered. Chapters indicated above refer to the core text (see section 10).

9. STUDENT EVALUATION

New module, not applicable.

10. LEARNING RESOURCES

10.1 Reading List

Core:

- Satzinger, J., Jackson, R. and Burd, S. (2014) *Introduction to Systems Analysis And Design, An Agile Iterative Approach* (6th Ed. International) Cengage Learning: Print ISBN: 9781473704749

Optional:

- Fowler, S. (2015) *UML Distilled: A Brief Guide To The Standard Object Modeling Language* (3rd Ed.) Pearson ISBN 9332553939
- Valacich, J., George, J. and Hoffer, J. (2016) *Modern Systems Analysis and Design* (Global Ed.) Pearson ISBN 1292154144
- David Hinde (2012) *PRINCE2 Study Guide*. Sybex Publishing

Online Journal Articles:

http://tsfdn.org/wp-content/uploads/2016/03/TS502-1-TS-Essentials-Guidance-Issue-1.2-WHITE.pdf

(Feb 2016) Trustworthy Software - Guidance Document

Trustworthy Software Essentials (TSE)

ISSUE 1.2 - TLP WHITE

eujournal.org/index.php/esj/article/download/3459/3222

Usman, M. , Soomro, T. and Brohi, M

Embedding Project Management Into Xp, Scrum And Rup

European Scientific Journal May 2014 edition vol.10, No.15, ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431

http://www.academia.edu/4592144/Agile_Unified_Process
Edeki, C. *Agile_Unified_Process*, International Journal of Computer Science and Mobile Applications,Vol.1 Issue. 3, September- 2013, pg. 13-17, ISSN: 2321-8363

http://www.ibm.com/developerworks/rational/library/edge/08/feb08/lines_barnes_holmes_ambler/index.html?ca=dat
Lines, M., Barnes, J., Holmes, J., and Ambler S.
Agile Rational Unified Process: RUP experiences from the trenches,
IBM developerWorks Technical Library, February 2008

RUP Best practice for software developments teams
http://srprojects.free.fr/desgest/downloads2/Rational_Unified_Process_Best_Practices.pdf

11. BRIEF GUIDE TO UNIVERSITY RESOURCES AND ADVICE ON REGULATIONS

1. Library and Learning Resources (LLR)

Resources and research support in the Perry Library
Being able to find relevant, quality resources is an integral part of the learning process. In addition to the print collection in the Perry Library building, students are provided with over 13,000 e-books and 12,000 e-journals. All of these electronic resources, including key databases like IEEExplore and ACM Digital Library can be accessed 24/7 from any location with an Internet connection. Students are welcome to contact the Library if they need help in locating research materials for their assignment and how to reference them by emailing fongr@lsbu.ac.uk

Students IT support in the Learning Resources Centre (LRC)
The LRC provides IT support to students including issues on LSBU account, accessing wi-fi network and use of particular software. There are about 350 PCs in the LRC and plenty of printing facilities. There is a team of IT trainers who can offer advice on using specialist software such as Nvivo and SPSS. The LRC can be contacted by email: LLRittt@lsbu.ac.uk or LLR-ithelpdesk@lsbu.ac.uk

2. University regulations and policies

General regulations and policies including guides and forms on academic misconduct, assessment and late coursework submission can be found on the Student Portal at https://my.lsbu.ac.uk/page/regulations.